THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XII. CHICAGO, MARCH 9, 1889. No. 10.

ORIGINAL ARTICLES.

ELECTRICITY AND THE DEATH PENALTY.

Read before the Chicago Medico-Legal Society, March 2, 1889.

BY CLARK BELL, ESQ.,

PRESIDENT OF THE MEDICO-LEGAL SOCIETY OF NEW YORK.

There has been for more than a quarter of a a century in this State a prejudice against the scaffold and the hangman. They that have yielded to the stern exactions of the law, which demands "a life for a life," have felt an almost insurmountable repugnance to the rope. The bungling of a Sheriff's assistant, the negligent or ignorant adjustment of the noose, have often caused such revolting scenes at public executions, as to fill beholders with horror, and add to that ever increasing number, now close to a majority, who demand the entire abolition of the death penalty as a punishment for crime.

The removal of the scaffold, as a factor in the civilization of our century, has engaged the attention of the New York Medico-Legal Society for many years. The first introduction of the subject before that body, was the paper of the eminent French scientist, Ambrose Tardieu, entitled "Diagnosis of Hanging.'[1]

The late Dr. Alonzo Calkins read a paper before that Society in September, 1873, entitled "Felonious Homicide; its Penalty and the Execution thereof Judicially,"[2] advocating the abolition of death by hanging, and discussing various methods as desirable substitutes.

The discussion was renewed before the Society, by Prof. J. H. Packard, of Philadelphia, who strongly urged the abolition of the hangman's rope, and recommended as the most desirable substitute, death by inhalation of sulphuric oxide gas.[3]

The whole subject was again brought before the Medico-Legal Society in February, 1888, by Dr. J. Mount Bleyer, in a paper entitled "Best Methods of Capital Punishment."[4]

The Legislature of the State, upon the recommendation of Governor Hill in his messages of 1885 and 1886, named a commission, composed of Hon. Elbridge T. Gerry (a member of the Medico-Legal Society), Mathew Hale, Esq., of the Albany Bar, and Dr. Alfred P. Southwick, of Buffalo, to examine the subject and report their conclusions. On January 17, 1888, this committee submitted their report to the Legislature of New York. It is a very exhaustive and elaborate document, too long for insertion here. It gives the history of human punishments for crimes, in earliest times, and in all countries. It enumerates and describes thirty-four different methods in which the death penalty has been hitherto inflicted.

The guillotine is in vogue in nineteen civilized countries, the sword in nineteen, the gallows in three, the axe in one, and the cord in one; while executions are public in twenty-nine countries, and private in seven.

The committee claim and enumerate the following, as facts demonstrated by their inquiry:

"1. That the effort to diminish the increase of crime by the indiscriminate application of capital punishment, to various offenses involving different grades of moral turpitude; or, in other words, by enlarging the number of capital offenses has proved a failure.

"2. That any undue or peculiar severity, in the mode of inflicting the death penalty, neither operates to lesssen the occurrence of the offense, nor to produce a deterrent effect.

"3. That from the long catalogue of various methods of punishment, adopted by various nations at different times, only five are now practicably resorted to, by the civilized world. These five are: 1. The guillotine; 2, the garrote; 3, shooting; 4, the sword; 5, the gallows.

"In recommending a change from the present barbarous and inhuman system of hanging, four substitutes are considered: 1. Electricity; 2, prussic acid or other poison; 3, guillotine; 4, garrote."

This Committee do not seem to have considered the proposal made by Prof. Packard, of a painless death by inhaling sulphuric oxide gas in a small room in each jail, nor the Lethal Chamber suggested by Dr. B. Ward Richardson, of London; and they discard the use of the hypodermic in-

[1] Medico-Legal papers, series 3, p. 40.
[2] Medico-Legal papers, series 2, p. 254.
[3] Medico-Legal papers, series 3, p. 521.
[4] Medico-Legal Journal, Vol. v, p. 424.

jection of prussic acid, or other deadly poison; "as hardly advisable, because against the almost universal protest of the medical profession!"

Their conclusions, after a careful, thorough, able and exhaustive examination of the whole subject are as follows:

1. That death produced by a sufficiently powerful electric current is the most rapid and humane, produced by any agent at our command.

2. That resuscitation after the passage of such a current through the body and functional centres of the brain, is impossible.

3. That the apparatus to be used should be managed so as to permit the current to pass through the centres of function and intelligence in the brain.

The commission suggested other considerations of great public interest, which may be stated as propositions:

1. That the State by the present universal sentiment of mankind, can only justify itself in taking human life, as a punishment for violation of laws, inflicting the death penalty, when necessary, for the safety of Society, and to deter others from the commission of crime.

2. That the State has not the right to torture the criminal, nor to inflict any punishment whatever, in any vindictive spirit, or by way of retaliation for the crime.

The Committee submitted a draft of a bill and recommended:

a. That executions should be private.

b. That the details of the execution should not be furnished to the public press and;

c. That the bodies should be delivered to medical schools for dissection in aid of science, or be buried in the prison yard.

The idea of punishment for crime, has colored all human laws. Such legislation has been called *punitive* for centuries. These statutes are denominated *penal* in all the Codes.

It is a little more than half a century, since hanging was the penalty in England for more than one hundred statutory offences, many of which are now regarded as trivial. Nearly all of these are abolished; but we still call the measure of punishment *penalties* and we even say "*the death penalty*" when we discuss it, and use the term "*capital punishment*" for judicial killing.

The value of the report of the Legislative Commission, considered in its broadest and ablest aspect outside the abolition of hanging, and substituting the Electric Current lies; in claiming that the universal public judgment and opinion of mankind should be recognized by the law making power, declaring:

That the penalty for violations of law, in what are called "capital cases," should not hereafter be regarded or treated as punitory.

That the State does not claim the right of inflicting any punishment upon the homicide, in a vindictive or retalitory sense, or as in any degree or view, as "punitory" or "compensatory" for the act committed.

That beyond the protection of Society, the rights of men, and what is called the "deterrent effects" of human punishment, the State has neither the right nor wish to go.

The Medico-Legal Society, by a Committee appointed February, 1888, duly considered the whole subject, and the report of that Committee was made to the body at the March Meeting 1888, unanimously adopted by the Society, and transmitted to the Legislature.

The report was prepared by me and met the approval of the entire Committee and was as follows:

REPORT OF THE COMMITTEE ON BEST METHODS OF EXECUTING CRIMINALS.

To the Medico-Legal Society:

The Committee to whom was referred the subject of the best method of executing the death penalty respectfully report:

That in the consideration of this subject they have considered the several papers read before the Medico-Legal Society by Ambrose Tardieu, Dr. Alonzo Calkins, Prof. J. H. Packard, of Philadelphia, Dr. J. Mount Bleyer, and the report of Hon. Eldridge T. Gerry, Alfred P. Southwick, M.D., and Mathew Hale, Esq., Commissioners, made to the Legislature on January 17, 1888, which were by action of this Society, laid before this Committee at the February meeting.

Your Committee are of the opinion that the Commissioners are entitled to the thanks of the Legislature and the public, for the able and exhaustive labor, they have bestowed upon the subject. Your Committee are of the opinion:

1. That the reduction by legislation in number among civilized States, of what are designated as capital offenses is in accord with enlightened civilization, and that its practical result has been the diminution, rather than the increase of crime.

2. That it should be legally established, by legislative enactments; that the State in fixing penalties for crimes, has no right to inflict a vindictive punishment upon a criminal, in any spirit of vengeance or retaliation.

That the object and justification of punishment should be to deter others, from the commission of crime.

3. That the provisions of our Constitution "that cruel and unusual punishments shall not be inflicted," should be enforced by appropriate legislation, and all existing statutes repugnant to either its letter or spirit, be repealed.

4. That hanging should be abolished as cruel, and contrary to the public sense of our civilization.

5. That as a substitute for the present death penalty, we would recommend:

1. Death by electric current, or,

2. Death by hypodermatic, or other injection of poison, or,

3. Death by carbonic oxide gas injected into a small room in each jail, as recommended by Prof. John H. Packard (Med.-Leg. papers, Vol. iii, p. 521), giving our preference to the first, or death by electric current.

6. That in our judgment executions, should be private, and not public.

7. That if it were possible, to prevent the publication of details of executions in the public press, it would be a public good.

8. That the bodies of criminals, should be delivered to the medical schools, after execution for dissection.

Your Committee do not pass upon the question, of the propriety of inflicting capital punishment by the State, against which there is strong objection in the popular mind.

The report is intended to be limited to the subjects embraced in the report now before the Legislature of the State, and the papers read before this Society.

R. Ogden Doremus, Clark Bell, J. Mount Bleyer, M.D., Chas. F. Stillman, M.D., Frank H. Ingram, M.D., Committee.

The Legislature of New York passed the following law, which received the approval of Governor Hill.

LAWS OF NEW YORK.—BY AUTHORITY.

[Every law, unless a different time shall be prescribed therein, shall commence and take effect throughout the State, on and not before the twentieth day after the day of its final passage, as certified by the Secretary of State. See 12, title 4, chap. 7, part 1, Revised Statutes.]

CHAP. 489. AN ACT to amend sections four hundred and ninety-one, four hundred and ninety-two, five hundred and three, five hundred and four, five hundred and five, five hundred and six, five hundred and seven, five hundred and eight, and five hundred and nine of the Code of Criminal Procedure relative to the infliction of the death penalty, and to provide means for the infliction of such penalty.

Approved by the Governor June 4, 1888. Passed, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. Section four hundred and ninety-one of the Code of Criminal Procedure of the State of New York is hereby amended so as to read as follows:

§ 491. When a defendant is sentenced to the punishment of death, the judge or judges holding the court at which the conviction takes place, or a majority of them, of whom the judge presiding must be one, must make out, sign and deliver to the sheriff of the county, a warrant stating the conviction and sentence, and appointing the week within which sentence must be executed. Said warrant must be directed to the Agent and Warden of the State prison of this State, designated by law as the place of confinement for convicts sentenced to imprisonment in a State prison in the judicial district wherein such conviction has taken place, commanding such Agent and Warden to do execution of the sentence upon some day within the week thus appointed. Within ten days after the issuing of such warrant, the said sheriff must deliver the defendant, together with the warrant, to the Agent and Warden of the State prison therein named. From the time of said delivery to the said Agent and Warden, until the infliction of the punishment of death upon him, unless he shall be lawfully discharged from such imprisonment, the defendant shall be kept in solitary confinement at said State prison, and no person shall be allowed access to him without an order of the court, except the officers of the prison, his counsel, his physician, a priest or minister of religion, if he shall desire one, and the members of his family.

§ 2. Section four hundred and ninety-two of said Code of Criminal procedure is hereby amended so as to read as follows:

§ 492. The week so appointed must begin not less than four weeks and not more than eight weeks after the sentence. The time of the execution within said week shall be left to the discretion of the Agent and Warden to whom the warrant is directed; but no previous announcement of the day or hour of the execution shall be made, except to the persons who shall be invited or permitted to be present at said execution as hereinafter provided.

§ 3. Section five hundred and three of said Code of Criminal Procedure, is hereby amended so as to read as follows:

§ 503. Whenever, for any reason other than insanity or pregnancy, a defendant sentenced to the punishment of death has not been executed pursuant to the sentence, at the time specified thereby, and the sentence of judgment inflicting the punishment stands in full force, the Court of Appeals or a judge thereof, or the Supreme Court or a justice thereof, upon application by the Attorney-General or of the district attorney of the county where the conviction was had, must make an order directed to the Agent and Warden or other officer in whose custody said defendant may be, commanding him to bring the convict before the Court of Appeals or a general term of the Supreme Court in the Department; or a term of the court of oyer and terminer in the county where the conviction was had. If the defendant be at large, a warrant may be issued by the Court of Appeals or a judge thereof, or by the Supreme Court or a justice thereof, directing any sheriff or other officer to bring the defendant before the

Court of Appeals or the Supreme Court at a general term thereof, or before a term of the court of oyer and terminer in that county.

§ 4. Section five hundred and four of said Code of Criminal Procedure is hereby amended so as to read as follows:

§ 504. Upon the defendant being brought before the court, it must inquire into the circumstances, and if no legal reason exists against the execution of the sentence, it must issue its warrant to the Agent and Warden of the State prison mentioned in the original warrant and sentence, under the hands of the judge or judges, or a majority of them, of whom the judge presiding must be one, commanding the said Agent and Warden to do execution of the sentence during the week appointed therein. The warrant must be obeyed by the Agent and Warden accordingly. The time of the execution within said week shall be left to the discretion of the Agent and Warden to whom the warrant is directed; but no previous announcement of the day or hour of the execution shall be made, except to the persons who shall be invited or permitted to be present at said execution as hereinafter provided.

§ 5. Section five hundred and five of said Code of Criminal Procedure is hereby amended so as to read as follows:

§ 505. The punishment of death must, in every case, be inflicted by causing to pass through the body of the convict a current of electricity of sufficient intensity to cause death, and the application of such current must be continued until such convict is dead.

§ 6. Section five hundred and six of said Code of Criminal Procedure is hereby amended so as to read as follows:

§ 506. The punishment of death must be inflicted within the walls of the State prison designated in the warrant, or within the yard or inclosure adjoining thereto.

§ 7. Section five hundred and seven of said Code of Criminal Procedure is hereby amended so as to read as follows:

§ 507. It is the duty of the Agent and Warden to be present at the execution, and to invite the presence, by at least three days' previous notice, of a justice of the Supreme Court, the district attorney, and the sheriff of the county wherein the conviction was had, together with two physicians and twelve reputable citizens of full age, to be selected by said Agent and Warden. Such Agent and Warden must, at the request of the criminal, permit such ministers of the gospel, priests or clergymen of any religious denomination, not exceeding two, to be present at the execution; and, in addition to the persons designated above, he may also appoint seven assistants or deputy-sheriffs who may attend the execution. He shall permit no other person to be present at such execution except those designated in this section. Immediately after the execution a post-mortem examination of the body of the convict shall be made by the physicians present at the execution, and their report in writing stating the nature of the examination, so made by them, shall be annexed to the certificate hereinafter mentioned and filed therewith. After such post-mortem examination the body, unless claimed by some relative or relatives of the person so executed, shall be interred in the graveyard or cemetery attached to the prison, with a sufficient quantity of quick-lime to consume such body without delay; and no religious or other services shall be held over the remains after such execution; except within the walls of the prison where said execution took place, and only in the presence of the officers of said prison, the person conducting said services and the immediate family and relatives of said deceased prisoner. No account of the details of any such execution, beyond the statement of the fact that such convict was on the day in question duly executed according to law at the prison, shall be published in any newspaper. Any person who shall violate or omit to comply with any provision of this section shall be guilty of a misdemeanor.

§ 8. Section five hundred and eight of said Code of Criminal Procedure, is hereby amended so as to read as follows:

§ 508. The Agent and Warden attending the execution must prepare and sign a certificate, setting forth the time and place thereof, and that the convict was then and there executed, in conformity to the sentence of the court and the provisions of this Code, and must procure such certificate to be signed by all the persons present and witnessing the execution. He must cause the certificate, together with the certificate of the post-mortem examination mentioned in the preceding section, and annexed thereto, to be filed within ten days after the execution, in the office of the clerk of the county in which the conviction was had.

§ 9. Section five hundred and nine of said Code of Criminal Procedure, is hereby amended so as to read as follows:

§ 509. In case of the disability, from illness or other sufficient cause, of the Agent and Warden to whom the death warrant is directed, to be present and execute said warrant, it shall be the duty of the principal keeper of said prison, or such officer of said prison as may be designated by the Superintendent of State Prisons, to execute the said warrant, and to perform all the other duties by this act imposed upon said Agent and Warden.

§ 10. Nothing contained in any provision of this act applies to a crime committed at any time before the day when this act takes effect. Such crime must be punished according to the provisions of law existing when it is committed, in

the same manner as if this act had not been passed; and the provisions of law for the infliction of the penalty of death upon convicted criminals, in existence on the day prior to the passage of this act, are continued in existence and applicable to all crimes punishable by death, which have been or may be committed before the time when this act takes effect. A crime punishable by death committed after the beginning of the day when this act takes effect, must be punished according to the provisions of this act, and not otherwise.

§ 11. All acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

§ 12. This act shall take effect on the first day of January, one thousand eight hundred and eighty-nine, and shall apply to all convictions for crimes punishable by death, committed on or after that date.

STATE OF NEW YORK, } ss.
Office of the Secretary of State, }

I have compared the preceding with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom and of the whole of said original law.

FREDERICK COOK,
Secretary of State.

This statute going into effect January 1, 1889, the writer felt it the duty of the body to consider, for the benefit of public officials, "what was the best method of carrying the same into effect," and recommended to the Society the appointment of a committee to consider this subject and report.

A preliminary report was made by this Committee at the November meeting, 1888, which was laid over for discussion to the December meeting, 1888.

That Committee there made a detailed report, which was, after discussion, unanimously adopted by the body.

The report is as follows

REPORT OF THE COMMITTEE OF THE MEDICO-LEGAL SOCIETY ON THE BEST METHOD OF EXECUTION OF CRIMINALS BY ELECTRICITY.

Introductory.—In the six weeks that have elapsed since the preparation of our original report to the Society we have made further valuable experiments, and although our report had not as yet been officially printed, we have received so many useful suggestions and criticisms upon such portions as had been given to the public in the press—both through correspondents and through discussions in various papers and journals—that we are enabled to present at this meeting a fuller and more explicit expression of our opinions. The additional light thrown upon a difficult problem has permitted us to make a few slight alterations in our earlier report, and to subjoin an appendix for the better elucidation of the subject.

The Report.—To the President and Members of the Medico-Legal Society: Your Committee appointed at the September meeting to consider and advise upon the proper method of executing criminals by electricity, reports as follows:

The law recently passed by the Legislature of the State of New York, providing for the administration of capital punishment by electricity, goes into effect January 1, 1889. All murderers sentenced to death for crimes committed on or after that date are to die by this means. As the use of electricity is an entirely novel method of putting to death human individuals, the manner of the application of the lethal current requires some thoughtful care and study.

The Commission appointed by the Governor to examine into various methods of causing death, which should be more humane than hanging, decided upon electricity. This Commission caused certain experiments to be carried out upon dogs, by which it was proven that electricity will produce certain and instantaneous death. In these experiments the animals were placed in a zinc-lined box half filled with water connected with one pole, while the other pole, in the shape of a wire, was wound around the nose or inserted into the mouth. There are no data as to the amount or kind of electricity employed. This method, although successful, is hardly applicable to a human being.

Some experiments were conducted by one of our Committee (Dr. J. Mount Bleyer), and reported in the *Humboldt Scientific Library*, March, 1887; and during the past summer a series of thirty or more careful experiments were made upon dogs with death currents at the Edison Laboratory, in New Jersey, by Messrs. Harold P. Brown and A. E. Kennelly, and the Chairman of this Committee (Dr. Frederick Peterson), all of which are of particular value to us in suggesting the proper method of executing criminals by electricity. These last were published in detail in the *Electrical World*, August 8, 1888, and from them we have ascertained the following points:

The resistance of these dogs was measured and found to vary from 3,600 to 200,000 ohms, depending upon the differing thicknesses of skin and hair, and the amount of moisture between the skin and the electrodes. The amount of electro-motive force was also accurately determined, and it was found that with the alternating current as low as 160 volts was sufficient to kill a dog, and that with the continuous current a much higher voltage was necessary for the production of a fatal effect.

There are several points requiring thoughtful consideration in the application of death currents to man which we will now proceed to lay before you.

The average resistance of the human body is

about 2,500 ohms. The most of this resistance is in the skin. It is evident, therefore, that the larger the surface of the electrode applied to the body the less will be the resistance. But it is also a fact that the density of the current depends upon the superficial area of the electrode. With a pole of small diameter the passing current will be more dense than when an electrode of large sectional area is applied.

We think that immersion of the body in a large quantity of water to act as one pole, or the placing of large metal plates upon any part of the body, should be put entirely out of consideration. It is further well known that if metal be directly in contact with the skin during the passage of an electric current burns and lacerations are apt to be produced.

We believe that all means hitherto suggested are open to criticism upon these grounds. The posture of the criminal requires also some discussion at our hands. We think there are serious objections to the employment of any apparatus in which the prisoner takes a standing position. There are so many histories of unseemly struggles and contortions on the part of criminals executed by the old methods that the necessity of some bodily restraint is evident. Furthermore, the possibility of a tetanic contraction of the body from the shock of the current is to be borne in mind. In our opinion, the recumbent or the sitting position is best adapted to our purpose.

Another question of importance is to which part of the body the two poles should be applied. There can be no doubt that one electrode should be in contact with the head. The other might be placed upon any portion of the body, upon the trunk or extremities, but there are obvious reasons why the neighborhood of the spinal cord would be more advantageous. The electric current, in passing through the body from one pole to another, undergoes more or less diffusion through the tissues. A current passing from the top of the head to the small of the back will be diffused throughout a great part of the brain, and all of the tissues of the neck. The medulla oblongata—a part of the brain which is the most vital—together with all the nerves of the neck and the spinal cord, which exercise jurisdiction over the lungs and heart, will be thoroughly permeated by the current applied in this way. As the seat of consciousness is in the brain, and particularly in the cortex of the cerebrum, it is clear that this faculty of the mind will suffer at once, if the current be sufficiently strong. The electric stream flows from the positive to the negative pole, and there might be some possible advantage in placing the positive pole on the vertex of the head, nearest the center of consciousness, although death in any case will be instantaneous.

After mature deliberation we recommend that the death current be administered to the criminal in the following manner:

A stout table covered with rubber cloth and having holes along its borders for binding, or a strong chair should be procured. The prisoner, lying on his back, or sitting, should be firmly bound upon this table, or in the chair. One electrode should be so inserted into the table, or into the back of the chair, that it will impinge upon the spine between the shoulders. The head should be secured by means of a sort of helmet, fastened to the table or back of chair, and to this helmet the other pole should be so joined as to press firmly with its end upon the top of the head. We think a chair is preferable to a table. The rheophores can be led off to the dynamo through the floor or to another room, and the instrument for closing the circuit can be attached to the wall.

The electrodes should be made of metal, between 1 and 4 inches in diameter, covered with a thick layer of sponge or chamois skin.

The poles and the skin and hair at the points of contact should be thoroughly wet with a warm aqueous solution of common salt. The hair should be cut short. Provision should be made for preventing any moisture reaching from one electrode to the other.

A dynamo capable of generating an electromotive force of at least 3,000 volts should be employed, and a current used with a potential between 1,000 and 1,500 volts, according to the resistance of the criminal.

The alternating current should be made use of, with alternations not fewer than 300 per second. Such a current allowed to pass for from 15 to 30 seconds will insure death.

APPENDIX.

We append here the experiments in abbreviated tabular form upon which we have based our conclusions:

EXPERIMENTS WITH DEATH-CURRENTS BY MESSRS. BROWN AND KENNELLY AND DR. PETERSON AT THE EDISON LABORATORY AND AT COLUMBIA COLLEGE.

Dog No.	Pounds Weight.	Ohms Resistance.	Character of Current.	Voltage.	Duration of Contact.	Result.
1	10	7,500	Continuous	800	2 seconds	Death
2	20	8,500	Alternating	800	3 "	Death
3	13½	6,000	Continuous	1,000	Instantaneous	Death
4	46½	11,000	Alternating	800	2½ seconds	Death
5	50	6,000	Contin'ous	1,000, 1,100 1,200, 1,300 1,400, 1,420 and 1,200	6 instantaneous shocks, the last 2½ seconds	Unhurt
6	55	3,600	Alternating	570	3 seconds	Death
7	41½	14,000	"	250	5 "	Death
8	56	27,500	"	160	5 "	Death
9	59	5,000	"	260	5 "	Death
10	76	15,000	"	330	3 "	Death
11	61	14,000	"	272	5 "	Death
12	91	8,000	"	340	5 "	Death
13	53	30,000	"	220	30 "	Death

(Details in *Electrical World*, August 8, 1888.)

EXPERIMENTS CONDUCTED BY MR. A. E. KENNELLY, AT THE EDISON LABORATORY.

Dog No.	Pounds Weight.	Ohms Resistance.	Character of Current.	Voltage.	Duration of Contact.	Result.
14	21½	. .	Alternating	205	3 seconds	Death
15	19½	. .	Alternating	176	15 "	Death
16	39½	. .	Alternating	178	15 "	Death
17	57½	. .	Continuous	400	40 "	Death
18	18½	. .	Alternating	140	45 "	Death
19	20	8,000	Alternating	255	35 "	Death
20	16½	4,200	Alternating	418	2 "	Death
			Continuous	304	30 "	Un-
21	37½	200,000	Alternating	100	65 "	hurt
22	12½	4,000	Alternating	500	30 "	Death
23	33	11,000	Alternating	536	1½ "	Death
24	10	9,700	Alternating	517	1 "	Death

(Details in *Electrical Review*, September 22, 1888.)

Objections having been made to the dogs on account of the small weight of the animals, the following larger animals were experimented upon by Mr. Harold P. Brown before your committee.

EXPERIMENTS CONDUCTED BEFORE THE COMMITTEE OF THE MEDICO-LEGAL SOCIETY AT THE EDISON LABORATORY, DEC. 5, 1888, BY MR. HAROLD P. BROWN.

	Pounds Weight.	Ohms Resistance.	Character of Current.	Voltage.	Duration of Current.	Result.
Horse	1,230	11,000	Alternating	700	25 seconds	Death
Calf	124½	3,200	Alternating	770	8 "	Death
Calf	145	1,300	Alternating	750	5 "	Death

(Details will be reported in *Electrical World*.)

In most of the dogs the poles were bare copper wire around wet cotton waste wound about a fore and opposite hind leg. Poles the same in a horse, but applied to both fore legs. In the calves sponge-covered metal electrodes were applied, one to middle of forehead and one near the spine between the shoulders.

Death with the alternating current was without a struggle; with the continuous, painful and accompanied by howling and struggling.

In the earlier experiments where the alternations were from 660 to 4,100 per minute, the voltage was higher. In most of the experiments the alternations were made from 12,000 to 17,280 per minute, and the number of volts electro-motive force required was decreased.

It was suggested to us that the current should be applied through wristlet electrodes. Acting upon this idea we caused the poles to be applied to the forelegs of the horse, but were disappointed in the result. This method seemed not nearly as effective as our own suggestion of application to the head and back, as was illustrated in the speedy and easy death of the two calves.

Mr. Elbridge T. Gerry, Chairman of the Commission appointed by the Governor, whom we invited to accompany us and witness the last experiments, has suggested that clock-work be employed to make and break the circuit when criminals are executed in this manner, and we think this a matter worthy of the attention of those who are to carry out the requirements of the law. His request that we specify more particularly the kind of apparatus needed, has led us to make inquiry in this direction. Relative to this matter, Mr. Harold P. Brown, who, by his numerous physiological experiments with death-currents and his high attainments in this department of science, is preëminently qualified to speak with authority upon this subject, recommends as follows:

"I think a portable steam-engine of three-horse-power with a dynamo electric generator of the alternating type, self exciting or with a small exciter, would be preferable. I approve fully the recommendations of your committee in regard to the electro motive force and other details. In my opinion $5,000 would cover the cost of this apparatus."

If any doubt should exist in the minds of some that electricity would not necessarily be fatal to man because it has been successfully applied to lower animals, we have but to call attention to the fact, that since 1883 some 200 persons have been killed, as we are credibly informed, by the handling of electric lighting wires.

As most of these people were killed probably by contact of the hands with the wires, it shows that in man at least death is rapid in this manner. Hence the suggestions made to this Committee as to the use of wristlet electrodes have their value; and it is possible that this method, with the prisoner fastened in a chair, may ultimately prove the most desirable, as doing away with a complication of appliances and lending greater simplicity to the procedure.

Frederick Peterson, Chairman. R. Ogden Doremus, Frank H. Ingram, J. Mount Bleyer.

Hon. Elbridge T. Gerry, who was named as a member of this Committee, preferred on account of his relation to the Legislative Commission, not to act upon this Committee, and his name is, therefore, not attached to this report. Mr. Henry Guy Carleton, a member of the body, who has given the subject great attention, at the December meeting read a carefully prepared paper on the same subject which was considered at the same session at which the report of the Committee was approved.

The law by its terms goes into effect January 1, 1889, and should be given a fair trial before popular opinion should be excited against it, or any general re-opening of the discussion as to its wisdom. It will be the first attempt made to use the electric current as a means of producing death or as a human punishment.

The Committee of the Medico-Legal Society were authorized and requested to consult electricians, and their report as to the selection of the appropriate current to be used is based as well on

actual experiments as on the highest electrical authority.

Mr. Thomas A. Edison, than whom none can be regarded as a higher authority, has said upon this subject: "The best appliance in this connection is, to my mind, the one which will perform its work in the shortest space of time and inflict the least amount of suffering upon its victim.

"This, I believe, can be accomplished by the use of electricity, and the most suitable apparatus for the purpose is that class of dynamo machinery which employs intermittent currents. The most powerful of these are known as 'alternating' machines. The passage of the current from these machines through the human body, even by the slightest contact, produces instantaneous death."

The plan suggested by the Committee is one which leaves no room for intelligent doubt or criticism, that if followed by the Warden of the State Prison, or other officials, the law, in its spirit and intent, will be perfectly and successfully carried into effect.

AN INTRODUCTION TO THE STUDY OF PNEUMONIC FEVER.

BY EDWARD F. WELLS, M.D.

THIRD PAPER—NATURE.

The nature of pneumonic fever has been a subject of warm dispute, and a variety of opinions have been held thereto. Clinically the disease is a many sided one, embracing: *a*. Such marked peculiarities in its general symptoms and morbid anatomy as to invite the belief that it is essentially a constitutional affection with a localization in the lungs. *b*. Constancy in the local changes, the magnitude and severity of which seem so often to govern the gravity of the general symptoms and results, as to lead to the opinion that it is in reality a local affection accompanied by the ordinary symptoms of a grave inflammation of a vital organ.

Three principal views have been held as to the essential nature of the disease: *a*. That it is simply an inflammation of the lungs with constitutional symptoms. *b*. That it is an essential fever in which the lungs bear the brunt of the disease—a veritable pneumonic fever. *c*. That it is neither a purely inflammatory affection nor a true systemic disease, but one occupying an isolated position between these.

These several opinions have had a numerical following within the profession, varying from time to time with the freaks of fashion and the ability, eloquence and persistency of the champions of their respective doctrines. Without going back very far we find that the popular belief has changed thrice in as many generations. A century ago the prevalent opinion, perhaps not stated in very precise terms, nevertheless expressed and implied, and the conviction acted upon in practice, was that pneumonic fever was a general phlogistic disease with a local affection of the lungs, through which organs the system eddeavored to eliminate the morbific material which was irritating the economy and was the real cause of the malady. Later it was generally believed that it was a local inflammatory process, the constitutional symptoms being a sympathetic irritation reflected from the affected organ throughout the general economy. This doctrine reached its greatest ascendency during the tyranical reign of the lancet in the first third of the present century. That the malady should be a systemic affection, with a local lesion, although still affirmed by the relics of a former generation and the prophets of a succeeding one, certainly never entered the mind of the rank and file of the medical profession. Now, however, this is the generally accepted and fashionable opinion—the pendulum of belief having swung from one extreme to the other and back again.

The ancients very generally considered it a local inflammation, although an attentive reading of their works will show that more than one author recognized the fact that the morbid action extends beyond the lungs.

Of the celebrated authors of the eighteenth century Cullen and Pringle recognized in this malady only a local inflammation, whilst Huxham, Hoffmann, Boerhaave, Van Swieten, DeHaen and Brown considered it an affection of the entire system.

Huxham[1] and Hoffmann[2] do not explicitly maintain that the disease is a general one, but from their descriptions and from their employing as its designation the term "*pneumonic fever*," we may infer with probability that they considered it something more than a common inflammation.[3] De Haen[4] thought that in this malady the blood became infected with a *materies morbi* which, in being extruded through the lungs, caused the local inflammation.[5] Boerhaave[6] regarded the morbific matter as being generated in the blood of obstructed arteries in the lung, from whence it passed into the bronchi and was expectorated, or, failing in this, it was absorbed by the circulating medium and discharged by the skin, kidneys or bowels as a critical evacuation.[7] The celebrated author of the Brunonian system[8] was quite clear in his estimate of the nature of this malady, saying that "the seat of the disease is the whole body," and giving as one of his reasons for this belief the fact that "the inflammation within the

[1] Essay on Fevers, London, 1739.
[2] Opera. Suppl., T. i, p. 165.
[3] See Sturges, Nat. Hist. Pneumonia, Lond., 1876, p. 2.
[4] Rat. Med., Leyden, 1761.
[5] See Cullen, Prac. Physic., Phila., 1792, vol. i, p. 184.
[6] Aphorismi de Cognas. et Cur. Morb.
[7] See Van Swieten's Comment. Aphor. Boerhaavii, Leyden, 1741.
[8] Brown, Elements of Medicine, Portsmouth, 1803, p. 299.

chest, for the most part follows the pyrexia at a considerable interval of time and never precedes it."

During the first three decades of the present century Paris was the medical center of the world and the views of Laennec, Andral and Chomel—the great triumvirate of the French school—are worthy of particular attention because they were probably those of the great mass of physicians of that day.

Laennec[9] considered pneumonic fever a pure local inflammation, saying that "the fever in peripneumonia is truly symptomatic, that is to say, is the effect of the inflammation. It rises and falls with the inflammatory orgasm."

Andral[10] is not so clear in his statements regarding the nature of the malady, although he is inclined to think it, in most cases, a local inflammation; although he admits that in others the local lesion seemed to be the result of a general disease. In one of his cases six days intervened between the onset of the fever and the earliest appearance of the physical signs. "All the organs seemed to be simultaneously the seat of a strong excitement, without there being any real inflammation. . . . . No organ was really inflamed, but all seemed on the verge of it." He says that this case illustrates the fact that inflammations may be "preceded by a general inflammatory state, of which the supervening inflammation is but in some degree the localization."

Chomel,[11] in his great work, has been too intent upon presenting the facts regarding the disease to deal in opinions as to its nature, although he evidently considers it a local inflammation.

That there are cases which lend an air of plausibility to the theory of the local origin and nature of the disease is not to be denied and may be illustrated by a great array of cases.

A young woman, engaged in a laborious occupation, perspired freely and, feeling overheated, sat in a cold draught of air. She promptly took a "cold in the head" and during the night was feverish and restless. The inflammation, beginning in the naso-pharynx, crept rapidly down the air-passages until the base of the left lung was reached, which became hepatized.[12]

Coming down to near our own time we find a gradual development of a general professional belief that the disease is a general one with a local manifestation in the lungs, although a few still hold to the doctrine that it is strictly a local inflammation, and yet a few others prefer to occupy a middle ground between these.

Copland[13] defines pneumonic fever as an "inflammation and its consequences in the parenchyma of the lungs, often implicating the small bronchi and air-cells on the one hand, or the pleura on the other, or either, more particularly or exclusively."

Trousseau[14] considers it a local affection; "The local phenomena generally open the scene" and "the general symptoms continue along with the local phenomena."

Davis[15] is perhaps the only author of wide reputation who yet holds pneumonic fever to be a local inflammation and who can perceive no evidence of a specific poison.[16]

Some authors[17] have considered pneumonic fever as occupying a solitary position midway between the local inflammations and the essential fevers.[18]

Eberle,[19] Merrell[20] and others think pneumonic fever a general disease of malarial origin.

Some authors have held that pneumonic fever is essentially a nervous affection.[21]

Fincham[22] believes the disease to be an essential fever, caused by the elimination through the lungs of noxious materials[23] that should be thrown off by the skin, but which is prevented by cold.

Draper[24] regards the pulmonary inflammation as a conservative process by which a *materies morbi* is destroyed or eliminated from the body.

Flint[25] says: "The pulmonary affection is doubtless inflammatory, but it is the local manifestation or the anatomical characteristic of a febrile disease, sustaining to the latter a relation analogous to that which the affection of the solitary and agminated glands sustain to typhoid fever. If this doctrine be true the proper place for this disease in the nosology is among the essential fevers."

Green:[26] Pneumonic fever is "undoubtedly to be regarded as a general disease, of which the pulmonary inflammation is the prominent local lesion. The view that it is strictly a local affection of the lung to which the pyrexia and other symptoms are secondary is altogether untenable."

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[9] Mediate Auscultation, N. Y., 1830, p. 223.
[10] Med. Clin., Phila., 1843, Vol. ii, p. 115 et p. 132.
[11] Pneumonie, Leipzig, 1841.
[12] Wells, Cincinnati Lancet and Clinic, June 10, 1882, p. 499. Similar cases have been observed by others; see Semple, Lancet, N. Y., 1858, Vol. i, p. 263.
[13] Med. Dic., N. Y. 1855, Vol. ii, p. 878.
[14] Clin. Med., Phila., 1873, Vol. i, p. 661.
[15] Prac. Med., Chicago, 1884.
[16] Similar views are held by Watson, Prac. Physic, Phila., 1845 p. 584; Elliottson, Prac. Med., Phila., 1844, p. 756; Drake, On Fevers, Phila., 1854; Swett, Dis. Chest, N. Y., 1856; La Roche, Pneumonia, Phila., 1853; Walshe, Dis. Lungs, Phila., 1860, p. 296; Gerhard, Dis. Chest. Phila., 1860, p. 203; Clark, Jour. Am. Med. Ass., Nov. 29, 1885, p. 615; Mott, Therap. Gaz., April, 1885, p. 234; Delafield, N. Y. Med. Rec., Nov. 28, 1885, p. 615; Lépine, Pneumonie, Wien, 1883, S. 103; Hollopeau, Rev. des Sci. Méd., T. xii; Williams, N. Y. Med. Rec., May 5, 1888, p. 506.
[17] Fox, op. cit.; Sturges, Pneumonia, p. 2.
[18] Rosenstein, Berliner Klin. Wochenschr., 1884, Nr. 18, S. 288, and Andrew, London Lancet, 1884, Vol. i, p. 788, think the proper place in the nosological scale for this disease is not yet determined. Satterthwaite, Phila. Med. News, Jan. 5, 1889, p. 2, says that it is "anatomically and clinically unlike any known disease."
[19] Prac. Med., Phila., 1831.
[20] N. O. Med. and Surg. Jour., July, 1851.
[21] Jackson, Lancet, 1887, Vol. ii, p. 1222; Heiss, Inaug. Diss., München, 1857, S. 17; Schuyler, N. Y. Med. Jour., Aug. 25, 1883, p. 205.
[22] Lancet, N. Y., 1858, Vol. i, p. 524.
[23] Naumann, Ergebnisse u. Studien aus d. Med. Klin. zu Bonn, 1858, considers that the disease is preceded by an incubating stage in which the blood is surcharged with fibrin. Of this, however, we have no proof and it is in direct conflict with some of the analyses made by Zimmermann. Quoted by Fox, Reynolds' System of Medicine, Phila., 1880, Vol. ii, p. 197, and the opinion of Virchow.
[24] Bull. N. Y. Acad. Med., 1866.
[25] Prin. and Prac. Med., Phila., 1881.
[26] Quain's Dic. Med., N. Y., 1883, p. 876.

Juergensen,[27] as is well known, considers the malady a general one with a local manifestation and allied in nature to typhoid fever. Moore[28] says that "the day is seemingly not far distant when we shall speak of pneumonic fever in precisely the same way as we use the term enteric fever at present; that is to signify a zymotic or specific blood-disease, manifesting itself after the lapse of a certain time—the period of incubation—by physical phenomena, objective and subjective, connected in this instance with the lungs."

A great number of authors[29] have held similar views, and this is the one which I maintain to be correct.

In my opinion pneumonic fever is a general disease with a local manifestation in the lungs, and I believe this conclusion warranted by all the facts in the case, including the following of especial prominence: α. It prevails, to a greater extent than common, during certain seasons, in particular localities, amongst special classes of the population, and epidemically. β. It is infectious and, probably, under peculiar circumstances, contagious,[30] γ. It is not directly caused by traumatism or the ordinary causes of local diseases. δ. The general symptoms always precede the local ones by an appreciable, and often a considerable interval. ϵ. The disparity frequently observable between the constitutional symptoms and the extent and character of the local lesions. ζ. The character and enormous amount of exudation material and its rapid removal, without destruction of tissue or loss of function. η. The constant presence of peculiar microscopic parasites, which are, probably, the germs of the disease. ϑ. The unvarying course of the disease and its wonderfully uniform death-rate under varying and opposite modes of treatment.

The disproportion often existing between the local lesions and the general symptoms must have been noticed by every observer of experience. Sometimes the local alterations are so slight as to almost or quite elude detection, and yet the constitutional symptoms may be of the most profound nature, or *vice versa*. A truly marvelous amount of local involvement may exist in the face of trivial symptoms, especially in the aged.[31]

In this connection, however, it should be borne in mind that there may be other changes in the lungs or other parts of the body, unknown as yet, of equal, or perhaps greater importance than those now familiar to us. "The essential features of a disease underlie, precede and stand in a dynamical relation to the anatomical lesions; determining, embracing, transcending and ruling them."

CHANGE OF TYPE.

It has been thought by some[32] that the type of this malady—pneumonic fever—in common with that of some other acute diseases, has changed since the end of the first third of the present century, and that evolution in this respect is yet in progress; that formerly pulmonary inflammations were sthenic, whilst now they are asthenic.

This belief probably had its origin in witnessing the remarkable and radical changes in the prevalent modes of treatment which transpired from 1830 to 1860.

This change-of-type theory gave rise to an immense amount of very warm discussion, being ably defended by many eminent partisans[33] and as powerfully attacked by an array of equally illustrious foes.[34] The discussion is now obsolete, from the fact that the advocates of the doctrine never pretended to base their belief upon anything more stable than the memory of man and a freak of therapeutic fashion. Those whose experience extended over many years contended that they remembered the pulse and general appearance of the patient as indicating greater activity of the disease in the early years of the century than forty or fifty years later, and cited the abandonment of blood-letting as proof of the proposition. On the contrary, the opponents of this theory denied the possibility of memory to compare incidents and appearances a third or a half century apart, and that the changes in treatment were more apparent than real—depressing medicines replacing the lancet. Although it may be impossible to compare

[27] Berliner Klin. Wochenschr., 1884, Nr. 17; also in Ziemssen's Handb. d. Spec. Path. u. Therap., Leipzig, 1877, Bd. V, S 28 u. S. 143.

[28] Trans. Int. Med. Cong., 1887; N. Y. Med. Rec., Sept. 10, 1887, p. 314.

[29] Markham, Lancet, N. Y., 1858, Vol. i, p. 20; Parkes, Med. Times and Gaz., February 25, 1860; Williams, Lancet, N. Y., 1862, Vol. ii, p. 3; Laveran, Traité des Mal. et Epidem. des Armées, Paris, 1875, p. 49; Hermann, Lungenentzündung, München, 1880, S. 5; Pulvermacher, Berliner Diss., 1882, S. 7; Gualdi, Jour. Am. Med. Assoc., July 5, 1884, p. 27; Sée, L'Union Méd., November 29, 1884; Robb, Jour. Am. Med. Assoc., November 28, 1885, p. 614; Loomis, Prac. Med., N. Y., 1884, also in Pepper's Syst. Med., Phila., 1885, Vol. iii, p. 307; Janeway, Phila. Med. News, November 28, 1885, p. 605; Hart, Jour. Am. Med. Assoc., October 10, 1885, p. 395; Orton, Med. News, November 28, 1885, p. 605; Grifouliére, Gaz. Méd., 1833, p. 475; Geike, N. Y. Med. Rec., September 10, 1887, p. 294; Draper, Trans. N. Y. Acad. Med., 1865; Thompson, N. Y. Med. Rec., November 28, 1885, p. 614; Joly, Rev. Méd. de Toulouse, July 1880; Kinnicut, N. Y. Med. Rec., November 28, 1885, p. 615; Patten, Therap. Gaz., April 15, 1885, p. 234; Holt, N. Y. Med. Rec., February 21, 1885, p. 217; Col. Invest. Com. Rpt. in Brit. Med. Jour., December 1, 1883; Jacobi, N. Y. Med. Rec., November 28, 1885, p. 615; Scott, N. Y. Med. Rec., September 10, 1887, p. 294; Heidenhain, Virchow's Arch., Bd. lxx; Lester, N. Y. Med. Rec., September 10, 1887, p. 294; Putzel, N. Y. Med. Rec., May 30, 1885, p. 608; Sanders, Trans. N. Y. Acad. Med., 1881; Didima, N. Y. Med. Rec., September 10, 1887, p. 294; Heiss, Inaug. Diss. München, 1857; Maragliano, La Riforma Medica, October 30, 1888; Fritsch, Inaug. Diss., Erlangen, 1878, S. 5; Virchow, Berliner klin. Wochenschr., February 6, 1888, S. 113; Smith, N. Y. Med. Rec., April 7, 1888, p. 398; Waller, Inaug. Diss., Erlangen, 1877; Graham, Canadian Practitioner, 1887; N. Y. Med. Rec., July 28, 1888, p. 95; Heidenhain, Virchow's Arch., Bd. lxx; Vanderpoel, Trans. N. Y. State Med. Soc., 1865; Baginsky, Pneumonie u. Pleuritis, Würzb., 1880, S. 123.

[30] My experiments in this direction have produced, thus far, only negative results, yet I expect to yet demonstrate the proposition.

[31] Hourmann et Dechambre, Arch. Gen. de Méd., T. xii, 1836; Patton, Jour. Am. Med. Assoc., October 16, 1886; Loomis, Charcot's Dis. Old Age, N. Y., 1881.

[32] Grisolle, Traité de la Pneumonie; Watson, Prac. Phys.; Semple, Lancet, N. Y., 1858, Vol. i, p. 263; Alison, Edinb. Med. and Surg. Jour., August, 1850; Maclachlan, Diseases of Advanced Life, London, 1864; Christison, Edinb. Med. and Surg. Jour., July, 1858; Caton, Lancet, 1884, vol. ii, p. 135; Loomis, Med. News, February 7, 1885, p. 161; Robinson, Phila. Med. News, January 5, 1889, p. 25.

[33] See references, *ante*.

[34] Bennett, Edinb. Med. and Surg. Jour., 1852, and Lond. Lancet, N. Y., 1864, Vol. i, p. 177; Markham, Lancet, N. Y., 1858, Vol. i, pp. 22, 126 and 201; Balfour, Edinb. Med. and Surg. Jour., 1858; Skoda, Allgem. Wiener med. Zeitung, 1863; Flint, Prac. Med., Phila., 1868; Fox, Reynolds' Syst. Med., Phila, 1880, Vol. ii, p. 243; Sturges, Nat. Hist. Pneumonia, London, 1876; Lebert, Berliner klin. Wochenschr., August 28, 1871.

the impressions of former years with those of the present time, yet there can be no difficulty in comparing the features of faces as shown in a portrait; the descriptions of cases as carefully noted; the degrees of heat as measured by the thermometer; the rate and force of the pulse as measured by the watch and the mercurial column, etc., for here we have something tangible and absolute from which to draw our conclusions. Now it so happens that the champions of the change-of-type theory have affirmed that the pulse of man has become weaker than in times past, and in the absence of authentic records to the contrary it would be difficult or impossible to successfully contradict the assertion. But here, where they have located one of their corner-stones, the ground is sandy. In 1730 Hales[35] recorded the force of the pulse as he measured it with the mercurial tube, and the experiments of recent observers[36] have given almost identical results. Again, if we compare the published clinical histories of a series of typical cases of pneumonic fever of the past and present, we find the same symptoms and appearances recorded in almost identical words, being presumptive evidence that they were alike in their essential nature and type.

I am of the opinion, and this view has been shared by others, that the real secret of the entire controversy is the recognition of certain forms of the disease, only possible by means of auscultation and percussion, which were not formerly considered examples of this malady. This explanation becomes more plausible when we recollect that it was with the advent of these aids to diagnosis that the advocates of evolution began to perceive the change. Previously it was only the marked cases—those with ardent fever, cough, oppression, pain and characteristic expectoration which were recognized, whilst those with latent or anomalous symptoms were excluded, and these were the very cases in which phlebotomy was either useless or prejudicial. During this period, also, the eloquent advocacy of the depressant plan of treatment by Laennec and his followers, and the "restorative" and stimulating plans of management by Bennett, Todd and the English school obtained very large followings, and assisted powerfully in effecting the change in favor in which bleeding was held.

It has also been supposed that mankind in general has deteriorated in physique during recent years, and that herein lays the reason for the alleged change in type of the disease. There can be no doubt that differing occupations, modes of living, dress and customs of the people, epidemic influences and the geological, climatic and meteorological conditions present may modify the type of the malady; but that this has occurred amongst a population whose surroundings have remained stationary is scarcely probable.

From these facts I am of the opinion that there has been no actual change in the type of this disease, and that the pneumonic fever of to-day is that of our fathers, and of past ages, and will be that of future generations.

NAME.

Objects and conditions require names for their convenient and certain identification, and no one will deny the desirability, and even the necessity, of a scientific designation for pneumonic fever which will clearly, yet tersely, indicate its seat and nature.

Writers upon this malady have treated of it under various and diverse appellations. Thus the Greek words *peripneumonia* and *pneumonia*[37] have been in common use since the days of Hippocrates,[38] who employed the former title. In this he was followed by a great number of authors[39] down to the present time. This term is also given as a synonym by the compilers of the "*Nomenclature of Diseases*,"[40] issued by the Royal College of Physicians of London. Sauvages,[41] desiring to be plainly understood, and wishing to distinguish the disease from some others with which it had been confounded, added the suffix *vera* to the name.

The *peripneumonia notha* of Sydenham,[42] Boerhaave[43] and others, the *peripneumonia catarrhalis* of Huxham[44] and the *pleuritis humida* of Stoll[45] were probably not true pneumonic fever.[46]

Pneumonia is the term in general use[47] and it is

35 Statical Essays, London, 1738.

36 Martin and Valentin in 1844; Ludwig in 1847; Vierordt in 1855; Keyte in 1884.

37 From *pneumon*, the lung.

38 De Morb., Lib. ii, et De Acut. Affec., Lib. ii.

39 Aretæus, De Caus. et. Sig. Acut. Morb., Lib. ii, Cap. i; Thenison, quoted by Kinsman, Ohio Med. Record, June, 1880; Celsus, De Med., Lib. iv, Cap. vii, Cœlius Aurelianus, Acut. Morb., Lib. ii, Cap. xxv; Alexander of Tralles, Opera, Lib. V, Cap. i; Aaron, quoted by Surianum in his edition of Rhazes, Lib. X, Cap. i; A. Galli, De Peripneumoniæ, etc., Bix., 1565; Wyer, Obsv. Rara, Basil, 1567; Pansa, Peripneumoniæ, Annab., 1614; Tossius a Serra, Peripneumoniæ Cur. Rat., Venet., 1618; Tennent, Epidemics of Virginia, Edinb., 1742; Wendt, Obsv. de Pleurit. et Peripneum., Gottin., 1762; Belleni, Peripneumoniæ, etc., Roma, 1775; Musgrave, Pleurisy and Peripneumonia, London, 1779; Romani, Peripneumonique bilieuses, etc., Metz, 1779; Kreyssig, De Peripneumoniæ Nervos, Lipsæ, 1796; Guilbert, in Haller's Dis. ad Med., Lib. ii; Otto, Peripneum., etc., Lips., 1797; Fiorani, Saggio sopra la Peripneumonia, Pisa, 1788; Racine, Rech. sur la Pleurisie et Peripneumonie, Paris, 1803; Brown, Elements of Medicine, Portsmouth, 1803; Hoffmann, Sur la Peripneumonie Typhoide, Strassburg, 1804; Mann, Medical Sketches, Dedham, 1816; Hosack, Am. Med. and Phil. Reg., Vol. iii, p. 448; Laennec, Traité de l'Auscultation Médiate, Paris, 1819; Aldis, Hospital Practice, London, 1838; Tomassini, Della Peripneumonie, etc., Bologna, 1817; Bertram, Inaug. Diss., Halle, 1842.

40 Washington edition, p. 38.

41 Nosol. Meth., Amstel., 1768, Lib. ii.

42 Works, London, 1788.

43 Aphorisms, etc., Leyden.

44 Med. Rat. Syst., London, 1752.

45 Rat. Med., Vienn., 1777.

46 See Wilson, On Fevers, N. Y., 1881, p. 10.

47 Hirsch, Handb. d. Hist.-Geog. Path. Bd. ii, S. 20; Horn, Erkentnisse u. Heil. d. Pneumonie, Frankf., 1802; Catteloupe, De la Pneumonie, etc., Paris, 1853; Esmarch, Inaug. Diss., Killie, 1821; Weller, Inaug. Diss., Zürich, 1854; Heiss, Inaug. Diss., München, 1857; Josephson, Inaug. Diss., Erlangen, 1884; Leyden, Volkmann's Klin. Vortr., Nr. 114–115; Biermer, Lehre von Auswurf, Würzb., 1855; Baginsky, Pneumonie u. Pleuritis, Tüb. 1880; Pause, Die Lungenentzündung, Leipzig, 1861; Sée, L'Union méd., 1873; Niemeyer, Pneumonie, Stuttg., 1876; Willbrandt, Inaug. Diss., Rostock, 1862; Cibiel, Thèse de Paris, 1874; Bauer, Deutsche Arch. f. Klin. Med., 1874, S. 490; Flint, N. A. Med. Chir. Rev., 1861; Le Beuf, Pneumonie, etc., Paris, 1870; Walcher, Thèse de Strasb., 1868; Legrand, L'Union Méd., 1860; Bain. Am. Jour. Obst. Vol. xi, p. 333; Biderd, Thèse de Paris, 1868; Waller, Inaug. Diss., Erlangen, 1877; Williams, Cycl. Prac. Med., Vol. iii, p. 406; Cullen, Prac. Phys., Phila, 1792, p. 177;

the one adopted by the compilers of the "Nomenclature of Diseases" above referred to. So long as the nature of the disease remained in doubt this was probably the best name that could have been adopted, inasmuch as it does not involve a pathological definition. *Acute* is prefixed to the principal term by some writers.[48] Lobar pneumonia is preferred by some,[49] while others employ *acute lobar pneumonia*,[50] primitive lobar pneumonia,[51] acute primitive diffuse pneumonia,[52] sthenic pneumonia,[53] etc.

The term *croupous pneumonia* was introduced by Rokitansky[54] and derives its significance from a fancied resemblance of the intra-alveolar exudate to that of laryngeal croup. The name ha been widely adopted in Germany and elsewhere. Various modifying words are added so as to render the term *acute croupous pneumonia*,[55] *croupous lobar pneumonia*,[57] *etc.*

Pneumonitis, a name implying the inflammatory nature of the disease is the term used by many.[58] Pringle[59] treats of the malady under the caption of "*pleurisy and inflammation of the lungs*," and many German writers employ simply the term *Lungenentzündung*[60] with or without the prefix *lobäre*.

Good[61] uses the name "*empresma pneumonitis*." Trousseau[62] requires several words to express his meaning, as "*pneumonia, peripneumonia vera, simple legitimate pneumonia*." Schliessinger[63] employs "*genuine fibrinous pneumonia*." The terse "*pneumonia*" of Walshe[64] in 1844 has become his "*acute asthenic exudative pneumonia*" of 1871. Valsalva and Morgagni,[65] impressed with the importance of the accompanying pleuritis, employed the term *pleuro-pneumonia* and their example has been followed by others.[66] *Pulmonia* was the term used by Amar.[67]

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[49] Holt, N. Y. Med. Rec., Feb. 14, 1885, p. 174; Doubleday, N. Y. Med. Rec., Mar. 28, 1885, p. 343; Kinnicut, N. Y. Med. Rec., Oct. 11, 1884, p. 399; Satterthwaite, Phila. Med. News, Jan. 5, 1889, p. 1.

[50] Schuyler, N. Y. Med. Jour., Aug. 25, 1883, p. 205; Lépine, Die Acute lobäre Pneumonie, Wien, 1883; Delafield, N. Y. Med. Rec., April 12, 1884, p. 398.

[51] Barthez, See Cincinnati Lancet and Obsv., 1864, p. 668.

[52] Lebert, Berliner Klin. Wochenschr. Aug. 28, 1871.

[53] Fuller, Diseases of the Lungs, Phila., 1867.

[54] Path. Anat., Phila., 1855, Vol. iv; See Fox, Reynolds' Syst. Med., Phila., 1880, Vol. ii, p. 153.

[55] Rindfleisch, Path. Histol., Phila., 1872; Juergensen, Ziemssen's Handb. d. Spec. Path. u. Therap., Leipzig, 1877, Bd. v; Bayer, Arch. f. Heilk., Bd. viii, 1867, S. 546; Kocher, Croupösen Pneumonie, Würzb., 1866; Thomas, Arch. f. Heilk., Bd. v, S. 30; Schube, Arch. f. Heilk., Bd. xvi, S. 185; Geudet, Croupös, Pneumonie, Nurnberg, 1886; Waller, Croupösen Pneumonie, Berlin, 1881; Mays, Therap. Gaz., April 15, 1885, p. 217; Maurer, Arch. f. Klin. Med., Bd. xiv; Schneider, Inaug. Diss., Erlangen, 1876; Fritsch, Inaug. Diss., Erlangen, 1878; Solberg, Inaug. Diss., München, 1883; Bachfeld, Inaug. Diss., Stuttg., 1885; Brey-Esser, Inaug. Diss., Griefswald, 1869; Speck, Inaug. Diss., Marb., 1870; Schapira, Inaug. Diss., Würzb., 1877; Sidlo, Behandl. d. Croup. Pneum., Leipzig, 1875; Schaffer, Inaug. Diss., Halle, 1885; Buttermann, Inaug. Diss., Griefswald, 1882; Sampter, Inaug. Diss., Breslau, 1881; Maurer, Inaug. Diss., Leipzig, 1884; Ebhardt, Inaug. Diss., Kiel, 1885.

[56] Fismer, Deutsche Arch. f. Klin. Med., 1873.

[57] Wintrich, Croupösen lobäre Pneumonie, Erlangen, 1843.

[58] Swediaur, quoted by Copeland, Med. Dic., N. Y., 1855, Vol. ii, p. 878; Hildebrandt, Path. Gen., Erlangen, 1795; Giovanni, Gaz. Med. Ital. Lombarda, 1872; Flint, Prac. Med., Phila., 1868, p, 163.

[59] Diseases of the Army, London, 1768, p. 139.

[60] Buhl, Lungenentzündung, etc., München, 1872; Huss, Lungenentzündung, u. s. w., Leipzig, 1861; Skoda, Allg. Wiener Med. Zeitung, 1863; Pause, Lungenentzündung, Leipzig, 1861; Fritsch, Erlangen Diss., 1878; Friedländer, Lungenentzünd., Berlin, 1873; Dinstl, Canstatt's Jahresb., 1862, Bd. iii, S. 219; Dietl, Lungenentzündung, Wien, 1849; Folkmann, Lungenentzündung, Erlangen, 1847; Rœdere, Œstrr. Med. Wochenschr., 1843; Hannover, Deutsché Klinik, 1863; Seitz, Behandlung d. Lungenentzündung, Marb., 1862; Scharf, Inaug. Diss., Berlin, 1837; Richter, Path. u. Therap., Berlin, 1833; Herr, Epidem. Lungenentzündung, Wetze., O. J.; Baumgartner, Behandl. d. Lungenentzündung, Stuttg., 1850.

[61] Study of Medicine, London.

[62] Clin. Med. Phila., 1873, Vol. i, p. 660.

[63] Inaug. Diss., Berlin, 1873.

[64] Dis. Lungs, First edition, London, 1844. Last ed., 1871.

[65] De Sed. et Caus. Morb. Hom.

[66] Bouillet, Pleuromonique Epidem., Besançon, 1759; Andral, Clin. Med., Phila., 1843, Vol. ii, p. 115; Mœring, Hist. Cholera, etc., Leipzig, 1830; Laveran, Gaz. Hebdom., 1865, p. 545; Vasquez, Thèse de Paris, 1878; Baronius, De Pleuropneumonia. Forolivii, 1638; Vorster, Pleuropneumonia Epidem., Basil., 1689; Brunner, Pleuropneumon. Epid., Heidelb., 1689.

[67] Pulmonia, etc., Madrid, 1777.

Huxham[68] and Hoffmann[69] were probably in advance of their time when they employed the term *febris pneumonica*, which although in common use by the laity in the popular designation, "*lung fever*," has had only a limited currency in the ranks of the medical profession.[70] *Pleuro-pneumonic fever* would be more accurately descriptive,[71] but the name is open to the objection of great length and hybridity.[72]

Believing, as I do, that the disease under consideration is an essential fever—a general malady—in which the principal and most constant morbid anatomical changes are located in the lungs,[73] I have adopted for its designation the term *pneumonic fever*.[74]

LAPAROTOMY.

FOR THE RELIEF OF RECURRING ATTACKS OF INTESTINAL OBSTRUCTION DUE TO PERITONEAL BANDS AND ADHESIONS. RECOVERY WITH COMPLETE DISAPPEARANCE OF SYMPTOMS.

BY JOHN G. PERRY, M.D.,

OF NEW YORK CITY.

The following history is taken from the patient's written account:

"On January 1, 1886, after much mental anxiety and responsibility, I succumbed to an attack of nervous prostration, the primary evidences of which were paroxysms of gasping and rapid respiration as if from hard running. April 7, of the same year, left home for New York, and soon after reaching there was seized with acute pain in the bowels followed by purging. Similar attacks recurred through the following summer at intervals of about ten days or two weeks, while loss of nerve power was fast becoming more marked. Returned to my home April 12, and immediately afterwards was ill with dysentery. After a month recovered sufficiently to move about the house, but before recovery was complete broke down again with peritonitis, and from this attack was confined to my bed three months, having two relapses; but through all the following months up to February, 1888, had attacks at intervals of three or four weeks of severe intestinal pain attended with nausea vomiting and collapse."

On February 24, 1888, the patient came to New York from her home in the West, and placed herself under my care; and as soon after as possible, I made an examination with the following results: Low down in the abdomen, on the right side, and just above Poupart's ligament, as if arising from it was a mass about the size of a hen's egg, firm, unyielding and exquisitely sensitive to the touch.

The uterus was in place, the Fallopian tube free and without apparent disease, and the ovary—well (?) I could not distinguish it. The history certainly did not indicate ovarian involvement. There was some dysmenorrhœa at each menstrual epoch, but it was not ovarian in character, while menstruation continued six and even seven days. The mass seemed beyond the place occupied by the ovary and by conjoined pressure was less sensitive than when pressed from the outside only. It was firmer, and more securely fixed than an ovary would be, and furthermore, the paroxysms of pain did not usually arise from the point of tumefaction, but higher in the abdomen and about two inches from the right of the umbilicus, from whence it would almost immediately depart and fix itself at the epigastrium, to be followed by vomiting and cramps of the stomach.

Later on I inflated the bowel with oxygen gas, with the effect of dilating the ascending colon just above the cæcum, where it seemed to be weak and yielding without effecting its passage into the ileum, even with the aid of manipulation within and without. Following this I sent 2 grains of calomel into the system as a detective, with the result of securing two moderate passages mixed with mucus, after which I again essayed inflation with oxygen with the satisfaction of feeling some of it pass beyond the obstruction.

Being now satisfied that I had only partial and not complete obstruction of the bowel with fæcal matter, and no evidence of abscess or serious inflammation, I began treatment for the removal of the mass and as follows: Each day the patient was to receive a hot abdominal pack for the purpose of relieving tenderness, inhibitory spasm and pain, and to stimulate intestinal digestion. Every fourth night 2 grains of calomel were to be given, and for diet hot milk alternated with Rudisch beef peptones, while as soon as the tenderness had subsided sufficiently she was to receive massage over the lower abdomen.

On the twelfth day when all seemed to be doing well, the patient gaining strength and the mass subsiding, she was suddenly seized with acute pain of the epigastrium, accompanied with nausea, and extreme hyperæsthesia over the whole surface of the abdomen. A promise was given that if the pain was not conquered within half an hour a hypodermic of morphia should be given, so the hot pack was applied and ordered to be continued until the pain subsided. Relief came soon, so that from this time on the habit of

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[68] Fevers, London, 1739.

[69] Opera Physio-Med., Genev., 1740.

[70] Massonie, Thèse de Paris, 1876; Cohnheim, Lec. de Chir. Méd., 1877, p. 171; Bernheim, Rev. Méd. de l'Est, 1877; Moore, N. Y. Med. Rec., Sept. 10, 1887, p. 314.

[71] Guitrac, Bordeaux Méd., 1873, No. 48, employs the term lobar pneumonic fever.

[72] Schuyler, N. Y. Med. Jour., Sept. 8, 1883, p. 257, in mistakenly objecting to the name "pneumonic fever," says: "What purpose is served by giving this fever the prominence which attaches to the term 'essential,' and according it a special name? By the designation of 'febris pneumonica' is any quality of the malady elucidated, which renders the important indications for treatment more clear, simple, or emphatic? On the other hand, does not such prominence act injuriously by withdrawing attention from indications of vastly more importance than those which arise in connection with the pyrexia?

[73] See ante.

[74] Lat., febris pneumonica. Fr., fievre pneumonique. Ger., pneumonisches fieber.

morphia was broken, and no further demand for it was ever made.

Similar attacks occurring twice afterwards, and within a few days of one another, and recalling the fact that when the pain began below it quickly transferred itself to the region of the stomach, I began to suspect dilatation of this organ, and at once introduced the flexible stomach tube with the result of washing away a large amount of undigested food, mucus and gas, and giving immediate relief to the patient.

This lavage of the stomach was now ordered for each morning before the introduction of food, with massage in the evening before the pack, and .2 grains of calomel every fifth night.

No paroxysm of pain occurred again. One or more movements were secured from the bowels daily. The patient's strength also improved daily, but it was April 15, before the whole of the fæcal mass was dislodged. The patient was now ordered to resume her usual diet, and to begin daily exercise out-of-doors.

All went well for a while, but after the walks had become extended to many blocks the patient began again to complain of discomfort and constipation, which increasing daily, forced me at length to make an exploratory examination, under which I found another mass of fæcal matter accumulated at the same point as before, and filling up three or four inches above Poupart's ligament.

That adhesions existed constricting the gut at this point there could be no doubt; certainly a second accumulation coming so soon after the first would not be fortuitous as I thought the first might be. All the possibilities and advantages of an operation now took possession of me; yet I hesitated, deeming it possible that if adhesions did exist and could be discovered, they might be overcome by distention and manipulation; so the patient was put to bed, and all the processes formerly established set in motion again.

The disintegration was slow and tedious, but the 10th of May it was wholly dispelled, and by the following method: I attempted either to loosen the adhesions or to stretch them sufficiently to free the bowels from their embrace, though as yet I had failed to portray any to sense of touch. Passing the index finger of the left hand along the right side of the vagina, and raising the uterus at its junction with the broad ligament as high as possible, I forced the fingers of my right hand deep into the groin from the outside, until by drawing them upward and backward I could strain every tissue that lay within the grasp of my fingers, varying the force and direction as my fancy or imagination dictated. After the manipulations the hot pack was applied to overcome the bruising and sensibility they created.

One fact was made prominent: that while this process continued no accumulation occurred, nor were laxatives rendered necessary, while later on the patient was able to resume her walks. Summer and hot weather now coming on, the patient was ordered to the seashore, where under the guidance of a physician, surf-bathing and a rigid dietary, she could demonstrate what had been accomplished.

Timidity and apprehension restrained her from venturing upon either solid food or exercise until well on in July, when, finding encouragement, she undertook a long walk. At once the pain returned, with nausea, headache and slight fever; and these not yielding to rest, the doctor was summoned. He fearing the presence of peritonitis, ordered morphine and hot applications. Being unwilling to resort to this method of treatment again, she returned to the hot packs, low diet, laxatives, and absolute rest, with the result of soon finding comfort and relief from pain with, later, ability to move about her room and on to the piazza where, through the rest of the summer she found her pleasure, with much gain in strength and weight.

Soon after my return in October, she came back to the city, and on being told that an accumulation from obstruction again existed, and that it would be only a waste of time to continue longer with palliative measures, she at once consented to an operation.

At this juncture I asked Professor F. S. Dennis, whose skill as an operator and experience in abdominal surgery, entitled him in the highest degree to judge, if he could approve my diagnosis and contemplated operation. He took no exception to either, but heartily endorsed the latter. For this and his valuable assistance at the operation I now wish to offer my recognition and thanks. To Drs. Meyers, of this city and F. F. Smith, of St. Augustine, Fla., I am also indebted for valuable services rendered at the operation.

After the necessary precautions had been taken to render the operation aseptic, it was commenced on the morning of November 1, by an abdominal incision (lateral) being made to run from about an inch above and two inches from the crest of the ilium (towards the median line) down towards and within an inch of Poupart's ligament, through the parietal muscles and to the peritoneum. A small amount of fæcal matter was left as a guide at the point of obstruction, and the incision passed directly over its centre. Seizing now the peritoneum with a pair of forceps, and raising it from the intestines, I divided it the whole length of the wound. At once there was a gurgling sound, and the imprisoned mass of fæcal matter moved on quickly and disappeared. The bridle or principal adhesion had evidently been severed along with the peritoneum, but yet on the outer surface of the cæcum, which was now plainly in

view, no evidences of inflammation recent or remote presented themselves.

Passing now the index finger between the folds of the intestines and behind the cæcum, I found a strong band, which, as it passed behind and towards the base of the cæcum, divided, one portion running inwards to be lost in the pelvis, the other outward and downward, losing itself in the pelvic fascia beneath the pubis. One extremity being cut between two catgut ligatures, and the other torn carefully from its adhesion, nothing now remained to prevent the whole of the cæcum from being passed in review along the palmer surface of the index finger.

Moved with great curiosity, I now thought of searching for the appendix, which, as yet, had not engaged our attention; but finding the cellular connections between the coils of the intestines undisturbed and without evidence of inflammation having disturbed its functions, I sponged and closed the wound, bringing the peritoneum together first with a running stitch of catgut, and then the parietes with silver wire running beneath the peritoneum, passed first according to the method of Dr. Jas. B. Hunter.

The usual outward dressings and bandages were now applied, as after laparotomy, and the patient put to bed. No evil symptoms occurred from this time on, while the highest point reached by the thermometer was $99\frac{3}{5}°$.

There being no pain, sulfonal was sufficient to keep the patient quiet and secure sleep at night. One month was allowed as a test of the cure, and no obstruction occurring within this time, the patient was discharged, her appetite being good and bowels acting daily.

February, 1889. The patient has since been heard from, and is doing well.

MEDICAL PROGRESS.

A Case of Dental Fistula Opening on the Mammary Gland.—The following case, reported by Dr. Nicolai, of Stuttgart, Germany, in the *Deutsche Monatsshrift für Zahnheilkunde* for December, 1888, illustrates forcibly the importance attaching to the necessity of placing the mouth at all hazards in a perfectly physiological condition.

Dr. Nicolai says: A lady, 32 years of age, who has not had her teeth examined for four years, presented herself to me to have her teeth placed in good condition. This necessitated cleaning the teeth, the removal of salivary calculus, and the introduction of eleven gold, six amalgam and two cement fillings.

On the completion of these operations, the mouth was in a normal healthy condition, with the exception of the lower left first molar, of which nothing but the roots were left; these were broken, and underneath the margin of the gum. They were filled with the ichorous products of decomposition, and their margins were overhung with the inflamed, tumefied gum. This condition of affairs has prevented the lady from masticating her food on this side for some time, and as a natural result the right side alone was used. After having performed all the necessary operations in her mouth, I endeavored, by naming all the disadvantages arising from the presence of the roots, to convince her of the necessity of removing them. I told her that the left side of her mouth was completely useless, that these roots have caused diseases of the two adjoining teeth of the same jaw, and of the articulating tooth of the upper jaw; that a tendency to the recurrence of caries still existed, that inflammation of the gums would always exist and that the breath will be always tainted. All these efforts were futile and were met with the single statement that, while the roots were not painful, she would not submit to their removal. To diminish the jeopardy of my work to the minimum, I concluded to place the roots in as good a condition as I could and, if possible, make them serviceable for mastication on that side of her mouth. Removing the tumefied, spongy gums, and all products of decomposition, and by means of the bur the ichorous contents of the roots, I adopted the most radical means of disinfection known to science, capped the roots with red guttapercha, and dismissed the patient, satisfied in my belief of having aided her to the best of my ability.

The following day the patient's husband came to my office, hastily requesting a few moments' interview. "What have you put in the lower tooth of my wife? Was it iodoform, carbolic acid, creosote, or some such substance having a marked odor?" On being answered in the affirmative, he merely thanked me, stating that the family physician would call on me. In astonishment I awaited the latter's call, who stated to me that the lady has had a slight discharge of pus for the last eight months, at a location about 1 cm. above the left nipple of the breast. There was no apparent disease of the breast. At first cold poultices were applied, these were succeeded by warm ones; later, a probe was introduced following the channel upward, and this was followed by the injection of astringent remedies, and finally by cauterization of the wound. The discharge, however, continues. To-day, the patient claims that she discovers the odor of the medicines used in her tooth yesterday, in the discharge from the breast. He wished to know whether it was possible that the lady is in error, or whether it is possible that there is some connection between the breast wound and the roots.

I have had a case of pus inundation where the discharge took place in the neighborhood of the shoulder. Many cases have been reported in our

literature, among others by Carabelli, but no case of infiltration to the mammary gland. The connection, if any exists, can be ascertained with certainty. If it is true that the medicaments used have passed from the roots into the wound on the breast, a harmless coloring would also do so. A cochineal solution was injected into the root-canals, and the following day the discharge from the breast was colored, thus positively establishing the connection. I concluded to extract the roots and thus, by removing the primary cause, cure the ailment. The examination made after the extraction of the roots proved that the pus had passed through the basilar portion of the lower maxilla, followed the border of the sterno-cleido-mastoid muscle, perforating the strong fascia of the platysma myoides, it followed the pectoral muscle and infiltrated the tissues of the mammary gland, discharging into the external world according to the laws of gravitation. Phenol water and boracic acid were afterward used. In about twelve days the wound on the breast was healed.—*The Dental Review*, February, 1889.

ANTIPYRIN IN THE FIRST STAGES OF LABOR.—We have already alluded to the fact that antipyrin is claimed during the first stages of labor to render the pains less severe, while at the same time not interfering with the progress of labor. Although these claims have not been universally admitted, and we have referred to papers in which the claim is made that it is entirely negative in its action in this respect, some results published by J. O. VAN WINKLE in the *New York Medical Journal*, for January 5, 1889, go far to substantiate them. He refers to several cases in which antipyrin was employed. The first dose was given when the os was about one third dilated, except in cases where the pains were very severe from the outset, when it was ordered earlier. Antipyrin, gr. xv, and spt. ammonia, xxx drops, were administered every two hours during the first stage for three doses. The temperature and pulse were noted at the time the first dose was administered, and every hour thereafter until dilatation was complete. In almost every instance the patient said she felt greatly relieved, and this was evident from her behavior. In some cases the patient would fall asleep for an hour or so after the first or second dose. Incidentally it was noticed that the temperature fell from half a degree to a degree and a half Fahrenheit. The pulse became somewhat more frequent and the respiration slightly increased. Occasionally, if the pulse was rather rapid before administering the drug, it decreased in frequency. From statistics as to the duration of labor in cases where it was not employed, and where it was employed, it would seem that antipyrin does not increase the duration of labor, but on the contrary, tends to lessen the first stage on an average of about half an hour, while the second stage remains practically the same, and in no case was there any injury done the mother or child. The author claims that antipyrin very materially lessens the severity of the pains during the first stage of labor, and has never given rise to any alarming symptoms, this immunity doubtless being due to the fact that in its administration it was always combined with a stimulant.—*Therapeutic Gazette*, Feb. 15, 1889.

SOME OF THE ABUSES OF ETHERIZATION.—At the conclusion of a paper on this subject DR. GEORGE F. SHRADY says:

In order to avoid many of the abuses of anæsthesia, to which we have referred, we may offer the following conclusions, upon which a fuller discussion may profitably turn:

1. In commencing the administration of ether the gradual method is to be preferred.

2. Its employment allows the lungs to empty themselves of residual air, prevents coughing and struggling, and places the organs in the best possible condition to receive and rapidly utilize the ether vapor.

3. After the stage of primary anæsthesia is reached, the more pure ether vapor the patient breathes the better.

4. The shorter the time of anæsthesia, and the smaller the amount of ether used, the less likely are the unpleasant sequelæ to occur.

5. The more evenly it is administered the less shock to the patient.

6. Anæsthesia should be entrusted to experienced administrators only.

7. Many of the fashionable efforts to resuscitate patients are not only useless but harmful.

8. The minimum amount of force should be employed to restrain the muscular movements of the patient.

9. Mixed narcosis is often advisable for prolonged operations.

10. The utility of the galvanic battery, in threatened death, is yet to be proven.

11. The most trustworthy means of resuscitating desperate cases are artificial respiration, hypodermic stimulation, inhalation of nitrite of amyl, and inversion of the body.—*Medical Record*, February 23, 1889.

CREOLIN IN OPHTHALMOLOGY.—DR. O. PURTSCHER gives the results obtained with creolin in the treatment of diseases of the eye. A 1 per cent. solution dropped on the conjunctiva of a eye produces a sensation of severe burning, which results in the eyelids being closely pressed together. This, however, is only momentary; the lids are soon reopened and large tears flow forth. After three or four minutes the irritation will have subsided entirely, save for a slight conjunctival irritation, which also soon passes off. Hence the

author recommends the use of cocaine before the application of creolin.

1. In simple conjunctivitis the results, as a rule, were good, especially in congestive catarrh, and in those forms complicated with inflammation of the corneal margin.

2. In conjunctivitis phlyctenulosa, the combined results of creolin with cocaine were admirable, especially in photophobia and scrofulous blepharospasmus.

3. Success was most marked in the papillary form of trachoma, the author having never seen such marked resolution of the papillæ from caustic treatment, as from that by creolin.

4. In blennorrhœa of the lachrymal passages, improvement was observed in many cases.

5. In all forms of keratitis with ulceration the deep ulcers healed rapidly; also ulcers with small hypopyum stood the creolin treatment admirably.

6. In parenchymatous keratitis the vascular growth was speedily arrested.

The author concludes that creolin is a powerful and valuable antiseptic, and at times to be preferred to the sublimate. It possesses another advantage in being non-poisonous, a fact that has lately been shown by Eisenberg.—*Centralbl. f. d. ges. Therapie*, January, 1889.

Poisoning by Hydrate of Amylene.—Dr. Dietz (*Deutsche med. Zeitg.*, 1888, No. 24) reports the following: A mixture containing hydrate of amylene was prepared for occasional administration to the patients of a clinic in Leipzig in order to procure sleep. Directions were given to shake the bottle before pouring out the dose. On one occasion the bottle was allowed to stand a few moments after having been shaken, and then four separate doses for four patients were administered. Amylene hydrate being of light specific gravity floats on water, the result being that the dose under these conditions was greatly increased. The symptoms produced in all four of the patients who took the drug were those of acute poisoning by alcohol—prolonged sleep, paralysis of the extremities, abolition of tactile sensibility and of the reflexes, dilatation of the pupils with feeble reaction to light, superficial, irregular respiration, and small, slow pulse. Hypodermatic injections of camphor was the treatment adopted, all the four patients recovering.—*Medical Chronicle*, January, 1889.

Myrtol, the new disinfectant for the air-passages, is best given, says Professor Eichhorst, in gelatin capsules, each containing 0.15 gram of myrtol. The drug has a powerful and penetrating odor, which can be detected in the breath for two days after one capsule has been taken. To obtain the deodorizing and disinfectant effects in cases of putrid bronchitis and pulmonary gangrene, 2 or 3 capsules should be taken every two hours, though the taking of so many as three capsules may cause loss of appetite. The effect is often wonderfully rapid, the bad odor disappearing from the sputa, and the sputa diminishing rapidly. Myrtol has no effect on tubercle bacilli.—*Therapeutische Monatshefte*, January, 1889.

Caffeine in Pulmonary Disease.—Te Gempt claims that the use of the double salts of caffeine is indicated in the course of acute fibrinous pneumonia when the heart begins to be enfeebled, the blood-pressure of the aortic system lowered, or when the pulse becomes unusually frequent or irregular. The use of the drug should be begun before symptoms of collapse appear. It should be used at the beginning of the disease in debilitated persons, drinkers, old people, and in subjects of cardiac disease. When used at the proper time and in sufficient doses it diminishes the frequency of the pulse and of the respiration, and increases arterial pressure, lowers temperature, and produces a sensation of well-being. It may, if necessary, be given by hypodermatic injections. After the period of apyrexia it is unnecessary to continue its administration. In atelectasis, hypostasis, emphysema, and pulmonary asthma, the double salts of caffeine are indicated as in heart diseases.—*Revue des Sciences Médicales*, January, 1889.

Detection of Aceton and Diacetic Acid in the Urine.—To a portion of the urine in a test-tube add a few drops of a concentrated solution of sodium nitro-prusside, and make the mixture alkaline by the addition of liquor potassæ. The resultant red color fades in a short time, and when there is no trace of it left add a small quantity of acetic acid. If aceton exists in the urine, a marked violet color will result. Diacetic acid (ethylic ether) in urine, gives with perchloride of iron, a deep red reaction, which disappears on boiling. The urine of persons who have taken thallin, antipyrin, carbolic acid, or salicylic acid gives the same reaction so far as color is concerned, but the latter does not disappear on ebullition. If the urine is boiled before the perchloride is added, the reaction, in case diacetic acid be present, does not occur. The search for diacetic acid must be made very soon after the urine is passed, as the acid very quickly decomposes, forming aceton and carbonic acid.—*National Druggist*, February 15, 1889.

Treatment of Hyperemesis Gravidarum.—Dr. Günther has obtained good results in five cases by the use of the constant current. The anode is applied, in the form of a sponge in a metallic shell covered with gutta-percha, to the cervix and the adjacent parts of the vagina; the cathode, in the form of a 10 × 20 cm. plate to the

region of the 8—12 dorsal vertebræ. The current is regulated by an Edelmann's galvanometer and a good rheostat, so as not to have too sudden or too powerful a current, lest abortion be produced. The strength of the current should be not more than 5 milliampères, and the duration of the séance from 2 to 3 minutes at first, and afterwards from 7 to 10 minutes. When the current was applied daily, the vomiting was arrested in four days at latest.—*Centralbl für Gynäk.*, No. 29, 1888.

INCOMPATIBILITY OF CHLORATE OF POTASSIUM AND IODIDE OF IRON.—The *Bolletino Farmaceutico* calls attention to the reaction produced when potassium chlorate and iodide of iron are brought together; the sesquide-oxide of iron is thrown down and iodine is set free, as follows: $2FeI_2 + KClO_3 = Fe_2O_3 + KCl + 4I$. The administration of a dose of this sort produced the death of a patient in a short time, and the *Bolletino*, in discussing the matter, urges great caution in prescribing and dispensing such combinations. —*National Druggist*, February 15, 1889.

CREASOTE AND COD-LIVER OIL.—DR. SEITZ, of Heidelberg, says that a useful formula for the administration of creasote in phthisis and chronic catarrhal affections of the air-passages, is one with cod-liver oil. [Beechwood creasote should be used].

℞. Creasote . . . . . 2.5 grams.
Cod-liver oil . . . . . 200. "
Saccharin . . . . . 0.1 "
S. Take a teaspoon to a tablespoonful once, twice, or thrice daily. *These doses are for adults.*

—*Therapeutische Monatshefte*, January, 1889.

HOW TO PRESERVE URINARY CASTS.—DR. CHAS. H. COCKEY, of Baltimore, says in regard to the opinion that urinary casts cannot be preserved: I have slides of urine, containing the different casts, blood, epithelium, etc., that were mounted ten or more years ago, and they are in as good condition as when first prepared. There are two formulæ used, one with glycerine, the other with acetate of potassium. I prefer the former. The latter grows dark with age, and throws down a precipitate. I have a bottle of each that I prepared eight years ago. The urine may be preserved in bottles, and used when desired, or the moist mounts may be made, finished in the usual manner and preserved in the cabinet.

Take of salicylic acid . . . . . 2 parts.
Borax . . . . . 1 part.
Add sufficient glycerine to dissolve.
Add three parts water for coarse organisms, five parts water for fine.

It is needless to say that all water used for microscopic purposes should be *distilled* water.

No. 1, take of a saturated solution of acetate of potassium one part, water sixteen parts; mix and add salicylic acid to saturation.

Dr. James Tyson says, "a pinch of salicylic acid will preserve four ounces of urine." *Philadelphia Medical Times*, 5-20-82, page 571.

Dr. J. G. Richardson says, "equal *bulk* of dry acetate of potassium added to urine will preserve casts." Same, page 558.

I have been informed that Dr. Gray, of Richmond, Va., preserves urine by adding a few (2) grains of chloral to each ounce.—*Maryland Medical Journal*, February 16, 1889.

LARGE DOSES OF ANTIFEBRIN IN SCIATICA.—DR. AUSTIN FLINT reports in the *New York Medical Record*, December 1, 1888, a case of long-continued sciatica, which, after failure of packing the limb for thirty-six hours in the flowers of sulphur, nerve-stretching, and other remedies, was cured in forty-eight hours by giving antifebrin to the limit of physiological tolerance. The first day 50 grains were given within four hours, and the patient became somewhat cyanotic and weak, but was relieved by a dose of whisky. The second day 40 grains were given in two hours. The third day the pain was completely gone and the patient walked without difficulty.

IODIZED GLYCERINE.—DR. G. HAMMOND points out that a mixture of tincture of iodine and glycerine produces a greater effect on the skin than the pure tincture, possibly because the glycerine tends to prevent the evaporation of the iodine, and thus enables the whole of its powers to be utilized.—*London Medical Recorder*, Jan. 21, 1889.

COCAINE IN THE TREATMENT OF ULCERS.—DR. E. N. NASON, of Birmingham, has found cocaine of great use in the relief of pain caused by the dressing of burns, fistulæ and painful ulcers. He uses a 2 per cent. solution, and has it sprayed upon the surface directly it is exposed. This acts almost at once, and the dressing may be continued with very little pain, and in extensive burns, with much less shock. The solution should in such cases be used warm. In the case of fistulæ a few drops should be poured over the sinuses before they are packed. With a 2 per cent. solution there is little fear of constitutional effects, and it will be found to act as well and as quickly as a much stronger one.—*Brit. Medical Journal*, January 5, 1889.

COCOANUT AS A TÆNICIDE.—PARISI, of Athens, reports several cases in which the endocarp of the cocoanut acted as an efficient tænicide. No preparatory treatment is necessary. The patient drinks the "milk," and then eats the endocarp of the nut. This is followed by a feeling of abdominal uneasiness and pain, slight diarrhœa, and finally the expulsion of the tænia after some hours.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, MARCH 9, 1889.

THE NEGLECT OF CLINICAL TEACHING.

A little more than a year ago "A Traveler from New Zealand" anathematized the whole system of medical education in the United States because of the (as he supposed) universal neglect of hospital attendance by medical students. The "Traveler from New Zealand" published a letter on the subject, in the *New York Medical Journal*, which called forth some letters of protest against "generalizing from insufficient data." Doubtless the generalizations of the traveler from the antipodes were too sweeping, since in some (a few) of the medical schools in this country the clinical teaching is of a high order; in others the clinical teaching is defective; in not a few it is, to all intents and purposes, omitted, or neglected by the students, since it is not compulsory. One may get an idea of the extent of clinical teaching in the medical schools in this country by referring to the annual announcements of the medical colleges, or to the "Fifth Report of the Illinois State Board of Health on Medical Education."

Taking first the 13 Canadian medical schools, we find that the teaching in them is regulated by the Provincial Medical Acts. That of Quebec, which is applicable, practically, as regards clinical teaching, to all the Provinces, requires, as regards clinical teaching: He (the candidate for license to practice medicine) shall have attended the general practice of a hospital containing not less than fifty beds under the charge of not less two physicians or surgeons, for a period of not less than one year and a half, or three periods of not less than six months each; and he shall have also attended six cases of labor. Some of the Canadian schools require twenty-four months' hospital attendance, some require eighteen months, some sixteen months' attendance on the practice of a lying-in hospital. In Halifax the candidate for the degree must have attended during one calender year the practice of the Victoria General Hospital, or that of some other hospital approved by the Senate of Dalhousie University; he must have attended six cases of midwifery, or for six months the practice of lying-in hospital approved by the college; and must have attained proficiency in the practice of vaccination.

Not one of the Medical Practice Acts in force in the United States distinctly prescribes clinical teaching. The only rule of any board of health or examiners in the United States that bears on this subject is Section V of the "Schedule of Minimum Requirements" of the Illinois State Board of Health. What are the college regulations in in this respect? There are 90 degree-conferring regular medical schools in the United States; of these, 31, or 30.44 per cent., require that the candidate for graduation must have had clinical instruction, or must have attended clinical lectures. In some cases the statements are exceedingly vague, *e. g.*, "he must have attended clinical lectures and dissections." It may be remarked that a student may *attend* clinical lectures and learn but little, just as he may *attend* dissections and not learn practical anatomy. While we do not assert that students may be graduated from 59 of the 90 regular medical schools of the United States without having received clinical instruction, this is certainly a fair inference; and we do not believe that this inference falls far short of the truth. Medical colleges are not prone to make their requirements appear less than they are.

What of bed-side teaching? Are there a dozen schools in the country the students of which are familiarized with disease at the bed-side? We doubt if there are, excluding the Canadian schools. It may be said that bed-side teaching is practically impossible in many of the schools, on account of the large number of students. But the question is as to what should be done. The graduate that has not had bed-side instruction is not fitted for the practice of medicine; he may learn in time, but for all that he is not a proper

person to take charge of a case of illness. To us it seems a self-evident proposition that the practical examination and treatment of patients is a necessary feature of the instruction of the medical student and of the examination for the degree of or license to practice medicine.

In a letter to the *New York Medical Journal*, regarding the communication already referred to, Dr. Duncan Ross says: "We cannot close our eyes to the fact that . . . . . medical teaching is very largely didactic, and that students do not, except to a very limited degree, avail themselves of the clinical material in our hospital wards. There are several reasons for this neglect of teaching at the bed-side, among which we may enumerate: 1. That students have been for so long a time drilled in didactic teaching at the expense of clinical work. 2. That medical clinics in the amphitheatre are practically the same as didactic teaching, the classes being so large that those in the front seats only can avail themselves of the signs and symptoms elicited. 3. That students are graduated after an examination on the didactic instruction, and not on their knowledge of the art of medicine as taught at the bed-side. And we might further add that clinical teaching has been prohibited by the governing boards of many of the institutions for the sick. The best way to stimulate interest in clinical study in the student is not by an eloquent discourse on signs and symptoms and morbid conditions, but by making him, under competent supervision, elicit signs and symptoms for himself and accustom himself to the treatment given; and, in the event of death, making him conduct the autopsy in a systematic way, under competent supervision. To replace, in a measure, didactic by clinical teaching will necessitate radical changes in our present methods of teaching medicine. No one man can hope to teach the *art* of our profession successfully, in any of the practical departments of medicine, to five or six hundred students."

When Graves was elected physician to the Meath Hospital, Dublin, in 1821, clinical investigation and clinical teaching scarcely existed. Students were not taught to observe cases, and were not trained to do so. "They might," says Bettany, "obtain their degree without having ever practiced diagnosis or co-operated in curing disease even to the extent of writing a prescription." "Often have I regretted," said Graves in his first lecture at the Meath Hospital, "that under the present system, experience is only to be acquired at a considerable expense of human life. There is, indeed, no concealing the truth—the melancholy truth, that numbers of lives are annually lost in consequence of maltreatment. The victims selected for this sacrifice at the shrine of experience generally belong to the poor classes of society, and their immolation is never long delayed when a successful candidate for a dispensary commences the discharge of his duties . . . . . nor is the possession of wealth in every instance a safeguard against the blunders of inexperience." At this time, says Stokes in his biographical notice of Graves, the student was kept at a distance; no one cared to show him how to teach himself, to familiarize him with the "ways of the sick," to train his mind to reason, and to inculcate the duty and pleasure of original work.

In THE JOURNAL of August 4, 1888, p. 178, we reprinted from the *Maryland Medical Journal* a note by Dr. George J. Preston, of Baltimore, on "Teaching in the London Hospitals," in which he says: "the teaching is done not by lectures, or, at least, very little in this way, but in the wards. The students are taught to take the histories of the cases, and the chief carefully goes over the history of each case, pointing out characteristics and peculiarities, and directing the examinations which each student makes for himself." The extent to which this method of teaching is practiced in this country is far too limited. The medical student in the United States sees, as a rule, many surgical operations, but has, as a rule, little individual instruction in surgical diagnosis and operative surgery; he hears lectures on cases of diabetes, phthisis, etc., and rare forms of disease, but has little opportunity to examine personally examples of disease that he will meet with in daily practice. He may graduate from some of our colleges without knowing how to make an analysis of urine. Clinical teaching in the dead-house—if we may use such an expression—is also too much neglected.

We know that there are some colleges in the country in which clinical teaching is a prominent feature of the courses; but these colleges are too few. Medicine cannot be learned from books and didactic lectures alone.

MEDICAL LEGISLATION.

At the present time the legislative bodies of many of the States are in session, and before several of them are bills or forms of law designed by their authors to better regulate and foster the education and practice of the medical profession. None of these bills are so framed as to produce with reasonable efficiency all the practical results for which they are intended, and no two of them agree in their essential details. In a great country like this, divided into forty-two States, and yet permitting the utmost freedom of intercourse and of migration from one State to another, it is exceedingly desirable that the laws regulating the education and practice of professional men should be so nearly alike in their essential provisions, that a license obtained in one State should be recognized by the licensing authorities of every other State. The only legitimate object for the enactment of State laws regulating the education and practice of medical men, is to secure an educated and skilful profession, and thereby protect the people from the disastrous effects of ignorance and imposition. To secure this most desirable object, the laws must be so framed as to require every person proposing to study and practice medicine to have, first, a good knowledge of the elementary branches of literature, the mathematics, physics and the natural sciences, with the mental discipline that such a degree of general education necessarily develops; second, the devotion of three years to the diligent study of the several branches of medical science and art, at least six months of each year to be spent in a medical college of recognized good standing; and during the second and third years the college attendance must include clinical instruction in a public hospital containing a daily average of not less than fifty patients; third, the appointment of a competent State Board of Medical Examiners charged with the duty of examining such persons as propose to commence the study of medicine, and grant certificates to those found qualified and register them as students; and also the duty to thoroughly examine all applicants for license to practice medicine and surgery in the State, and issue licenses to those only who are found qualified by the possession of a practical knowledge of all the recognized branches of medical science and art, and of a good moral character.

The three foregoing items must be essential parts of every law that can be executed in such a manner as to eliminate ignorance and imposition from medical practice, and afford the highest degree of protection of the public and individual health. In almost all other details, such as the number of members to constitute the State Board of Examiners; the term of their office; by whom they shall be appointed; the times and places at which the Board shall hold its meetings and keep its records; the fees to be charged, etc., may vary to suit the exigencies or caprice of the several legislative bodies. But while almost all concede the correctness of the demand for a fair general education as a necessary preparation for entering upon the study of medicine; the devotion of at least three years to the direct study of medicine and surgery in medical colleges and hospitals; and for a competent State Board of Examiners to determine the qualifications of all who propose to study and practice the healing art, there appears to be much difficulty on the part of committees, both legislative and medical, in framing the details of bills in such a manner as to reach the practical results desired. To aid those engaged in such work and at the same time make our views more plain, we give a form for legislative enactment on another page, under the head of "proposed medical legislation," and invite attention to both its principles and its details. Two of its essential features now exist in the laws in force in Minnesota, Virginia, North Carolina, Alabama, and perhaps some other States, but in none of them is there provision for enforcing an adequate general education before entering upon the study of medicine, or for securing proper attention to clinical study.

THE VALUE OF SULFONAL.

This hypnotic has now been before the profession long enough to give some idea of its merits, and there is little discrepancy, thus far, in the accounts of its effects furnished by different observers. Administered in doses of from 15 to 30 grains it usually induces quiet sleep for several hours without subsequent unpleasant effects. Owing to its sparing solubility in water, it is slow in its action, an hour and a half to two hours usually elapsing before the full effect of the drug is experienced.

DR. W. L. WORCESTER, Assistant Physician to

the Arkansas State Lunatic Hospital at Little Rock, has communicated to us the results of trials of sulfonal which have been made there since the middle of November last. It has been administered to seventeen different patients, being nearly all the cases in which the use of hypnotics was thought advisable during that time. Only one patient, a large, powerful man, in a state of violent excitement, proved entirely refractory. In his case three doses, of 20 grains each, administered in the course of one night, failed to produce any perceptible effect. With this exception, 20 grains was the maximum dose, and this amount did not fail in any case to produce sleep, lasting usually from five to eight hours. No undesirable effects on the circulation, appetite, digestion or general condition of the patients were noticed in any case. To most of the patients only a few doses were given, but in one case the administration was continued for thirty-six days, in another for twenty-three. In neither of these cases was it necessary to increase the dose; on the contrary, it seemed more effective in the latter than the earlier part of its administration, and in one case the patient, who had been for a number of months very noisy, seemed to be permanently improved.

A few cases have been reported in which the administration of the drug was followed by a rash that lasted, with troublesome itching, for two or three days. With this exception, the only case of serious toxic effects that has come under our notice is reported by Bornemann (*Deutsche Medicinal-Zeitung*, No. 95). The patient, who was endeavoring to break off the morphine habit, received 60 grains of sulfonal at bedtime. This failing to give sleep, 30 grains additional were administered at 1 A.M. Shortly afterward he showed symptoms resembling those of alcoholic intoxication; had double vision and the feeling of having two heads and two pairs of arms. Although no more of the drug was administered, the symptoms did not entirely pass off until the sixth day. Forty-five grains had previously been administered in one dose, with satisfactory effect.

This case would seem to show that some caution should be exercised in administering this, like most other remedies profoundly affecting the nervous system. In the light of experience with drugs of its class, it is probably not to be expected that it will be entirely free from deleterious effects, but it seems likely to prove as little objectionable on that score as any hypnotic thus far discovered. Its tastelessness is an advantage not to be lightly estimated. The principal drawbacks developed thus far are the slowness of its action and its high price.

Hypnotics, as a class, are palliative rather than remedial agencies, and this is no exception to the rule. It is much better, where practicable, to remove the cause of sleeplessness than to attack the symptom, but there is a legitimate field for remedies of this class, and there seems little reason to expect a cessation of the demand.

THE LOMB PRIZE ESSAY AND THE NEW YORK HERALD.

Through its Secretary, Dr. Irving A. Watson, the American Public Health Association publishes a circular to the public, saying that after the Milwaukee meeting of this Association, Mr. Henry Lomb received a telegram, signed by James Gordon Bennett, asking for the Lomb Prize Essay entitled "Practical Sanitary and Economic Cooking for persons of Moderate and Small Means," which had just been awarded the $500 prize, for publication in the *New York Herald*. In response to this, Mr. Lomb and the Secretary, believing that it would be a good medium through which to present this very able and valuable essay to the public, went to New York and had an interview with Mr. Bennett's representative. Almost the first question propounded by the representative was, "What do you ask for the essay?" He was informed that it was not for sale at any price, but that if the *Herald* would publish it in full, it should have the privilege of first presenting it to the public. The representative critically examined the manuscript, acknowledged its great value, and, after making a careful estimate of the number of words it contained and the space it would occupy in the *Herald*, accepted the proposition, and agreed to and did pay for a type-written copy of the same. Mr. Lomb and the Secretary then left, with the full understanding that the entire essay was to appear in the *Herald* at its first convenience. The Secretary ordered fifty copies of the *Herald* that was to contain the essay.

Instead of printing the essay as it was written, the *Herald* mutilated it almost beyond recognition, omitting the scientific portion of it, including the discussion of Food Principles and their functions, omitting also the bills of fare for those in moder-

ate means and the poor—this being the very part of the essay for which the prize was offered. To make matters still worse, "That part of the essay which the *Herald* printed is misleading, inasmuch as it is made up from extracts in some instances taken from different parts of the original, and put together as a continuous production. Portions of the essay were transposed, new headings inserted, sentences broken in two, and words not in the manuscript interpolated. The editor also attempted to stamp his personal opinions and prejudices upon the paper, by the use of display type, in several places," And "instead of the legitimate heading which accompanied the type-written copy of the essay, the editor substituted one, which from a literary stand-point, would be discreditable to the cheapest and most irresponsible publication extant. It contained such expressions as, 'The Devil sends the Cook, but the *Herald* sends forth an Antidote,' 'Indigestion Knocked Out,' 'Girls, the Road to a Man's Heart is through his Stomach,' 'An Abel Essay,' 'Miss Mary Hinman Abel took the Cake,'" etc.

The above statement is made to remove the unjust imputation of inferiority of the essay and incompetency of the judges, which the garbled extracts in the *Herald*, have placed upon them, to say nothing of the violation of understanding in reference to its publication. "The essay, which will soon be given to the public in an authorized form, needs no defence, but it should not be judged by the extracts above referred to. The concluding remarks in the report of the Committee of Award show their appreciation of it, after a critical examination. 'The Committee consider it a duty, in awarding the prize, to emphasize the fact that of all the essays submitted the one selected is not only preëminently the best, but that it is also, intrinsically, an admirable treatise on the subject. It is simple and lucid in statement, methodical in arrangement, and well adapted to the practical wants of the classes to which it is addressed. Whoever may read it can have confidence in the soundness of its teachings, and cannot fail to be instructed in the art of cooking by its plain precepts, founded as they are upon the correct application of the scientific principles of chemistry and physiology to the proper preparation of food for man.'"

It is not to the discredit of Mr. Lomb and Dr. Watson that they were thus imposed upon by unscrupulous newspaper men. It is to be regretted that they had only a verbal understanding, especially with the *New York Herald*, which has been in existence long enough for most people to be conversant with its methods. Should any of the essays be published in newspapers in the future, we would suggest that a written agreement be obtained, and that they be sent to several papers for simultaneous publication.

THE FORTIETH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

On another page will be found a full and official notice of the coming meeting of the Association, in Newport, Rhode Island, commencing June 25, 1889. This notice of the Committee of Arrangements indicates careful methodical work, excellent accommodations for all Association interests, and a commendable spirit of true *fraternity*. We hope the profession will respond in the same spirit from every State and Territory of the Union. Now is the time for those intending to present papers in any of the Sections, not only to notify the Chairman or Secretary of the Section, but to engage diligently in the work of preparation, that their work may be well considered and complete when presented.

EDITORIAL NOTES.

THE EIGHTH CONGRESS OF THE GERMAN SURGICAL SOCIETY will be held in Berlin on April 24–27. On the first day Professor von Esmarch will open a discussion on the "Etiology and Diagnosis of Carcinoma, especially of the Tongue and Lips," after which there will be an exhibition of patients that have survived for more than three years operations for carcinoma of the tongue, rectum and stomach. The permanent secretary of the Congress is Professor Dr. Gurlt, W., Keithstrasse No. 6., Berlin.

PROFESSIONAL CRAMPS.—This age of division of labor has given rise to a variety of functional spasms, or professional cramps, of which writer's cramp is the type. Cases of such functional spasm have been reported in pianists, violinists, telegraphers, photographers, watch-makers, shoemakers, tailors, sempstresses, cigar makers, milkers, blacksmiths, dancers, etc. M. FÉRÉ has recently communicated to the Societé de Biologie a case of flutists' cramp. When the patient

wished to play his instrument, the last three fingers of his right hand became cramped in a painful manner, the spasm affecting both the flexors and extensors of the fingers. The patient was cured by massage and hydrotherapy. Remak some time ago presented to the Berlin Medical Society a patient affected with milker's cramp. When she tried to do her work, her hand became convulsively closed, the thumb being flexed in the hand. She was obliged to give up her occupation. From the fact that his patient was cured without giving up his work, M. Féré concludes that professional cramps occur only in those predisposed to them, and bear no relation to the local fatigue of organs. In support of this opinion Brown-Séquard cited the case of a journalist who was attacked by writer's cramp in the right hand, then in the left, and finally in the foot, with which he attempted to write. Dumontpallier has reported the case of a patient that had cramp in the right hand when he attempted to write with the left hand. This fact of associated or synergic movements says De Ranse, is much more easily explained by the hypothesis of the central than than of the peripheric origin of the functional spasm. Remak noted in his case marked diminution of sensibility in the hands, especially in the region supplied by the median nerve, and he attributes the trouble to a peripheric neuritis, due to excessive use of the hands.

THE MEDICO-CHIRURGICAL ACADEMY OF SPAIN has set the following questions for its prize for 1889: 1. Critical Study of Antiparasitic Medications—in medicine, surgery, and obstetrics. 2. Critical Examination of Lithotrity, Lithotomy, Litholapaxy, and Perineal and Suprapubic Cystotomy. The essays must be in hand by September 15; they may be written in Spanish, Portuguese, French, Italian, English, or German.

THE INTERNATIONAL PHYSIOLOGICAL CONGRESS will be held in Basle on September 10, 1889. The Committee in charge has chosen coworkers in different countries; the American representative is Dr. H. B. Bowditch, of Boston.

THE CURE OF TUBERCULOSIS.—M. Jules Lebaudy, a wealthy manufacturer of Paris, has recently, on the advice of his physician Dr. Paquelin, subscribed 10,000 francs to a fund for the encouragement of studies on the cure of tuberculosis. The total amount subscribed on February 15, was 74,656 francs ($14,931). If, says the *Gazette Médicale de Paris*, the millionaires, who are not very rare, would follow this example, the near future would see scientific researches and their practical application for the good of humanity.

PHYSICIANS IN THE ITALIAN SENATE.—There are now four medical men in the Italian Senate: Dr. Minich, of Venice, Professor Durante, of Rome, Professor Todaro, of Rome, and Professor Cantani, of Naples.

TRANSACTIONS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS.—Any member of the Congress entitled to the Transactions who has not received them, either in this country or Europe, should notify the late Secretary-General, John B. Hamilton, M.D., Washington, D.C., as some parties have changed their residences since their names were registered at the Congress.

ASSOCIATION NEWS.

American Medical Association. Fortieth Annual Meeting.

To be held at Newport, R. I., June 25, 26, 27, and 28, 1889.

OFFICIAL NOTICE.

The Association having departed from its usual custom of convening in the chief cities, by deciding to meet the present year at a simple watering place that, despite its repute, is without certain of the resources hitherto relied upon, the Committee of Arrangements ask in advance for the kind consideration of the multitude of physicians whom they trust soon to welcome. A fact or two in this connection may perhaps be stated. Ordinarily a great many local medical men are appointed to aid the Arrangements' Committee, and thereby the duties of each are rendered less onerous. In the present instance, of the eighteen names fifteen comprise the sum total of the resident (regular) physicians of Newport, while the remaining three are dental practitioners. The Committee is therefore this time absolutely "of the whole." Of its number but a single one has ever been a member of the Association, or even attended a meeting. All who comprise it are, however, heartily in accord, and will do their best, trusting that their good will may make amends for their lack of previous experience.

THE COMMITTEE OF ARRANGEMENTS

is constituted as follows: Drs. C. F. Barker, M. E.

Baldwin, C. A. Brackett, J. P. Curley, P. F. Curley, J. P. Donovan, H. Ecroyd, Jr., V. M. Francis, T. A. Kenefick, H. G. MacKaye, G. M. Odell, F. H. Rankin, W. C. Rives, Jr., E. P. Robinson, S. H. Sears, W. S. Sherman, H. R. Storer, and H. E. Turner, of Newport; Surgeon S. M. Horton and Asst. Surgeon R. W. Johnson, U. S. A., of Fort Adams, and Surgeons J. C. Wise, of the Torpedo Station, and T. L. Neilson, and Asst. Surgeons Arnold and Von Wedekind, of the Naval Training School, U. S. N., *ex-officios;* and, as an Associate Committee appointed by the Rhode Island Medical Society, Drs. G. D. Hersey, W. H. Palmer and G. T. Swarts, of Providence.

THE SUB-COMMITTEES ARE:

Finance.—Drs. Rankin, MacKaye and Hersey.
Reception.—Drs. Turner and Odell.
Halls and Accommodations.—Drs. Barker and Baldwin.
Entertainment.—Drs. Sears and Kenefick.
Invitations.—Drs. Rives and Swarts.
Registration.—Drs. Ecroyd and Sherman.
Exhibits.—Drs. Brackett and Robinson.
Transportation.—Drs. P. F. Curley and Palmer.
Section Work and Programme.—The Chairman and Local Secretary.

If, as occasion may arise, correspondents will kindly address the respective heads of the Sub-Committees, it will very materially lighten the labors of the Chairman-in-chief. It is probably generally understood that the titles of papers to be presented to the Sections should, in the first instance, be sent to their Chairmen. Already a large number of communications have thus been listed, and there is reason to expect that the meeting will be a peculiarly interesting one in this regard, but to ensure a hearing at all early in the Session, there should be no longer delay upon the part of contributors.

The Local Secretary appointed at Cincinnati by the Association, having, in consequence of removal to another city, resigned his position, the Committee were for a while embarrassed. Dr. Valentine Mott Francis, formerly of New York, has however, consented to fill the vacancy, at the unanimous request of his colleagues. Though Dr. Francis has for some years retired from practice, he has none the less retained his interest in the profession, which in the past, was so honored by those whose famous names he bears.

It was thought best, after consultation with the other officers of the Association, to postpone the date of meeting from the first to the last Tuesday (the 25th) of June, for the reasons that the chief hotel of the place would not open until that date, and that earlier the town would not be so attractive, nor the weather as likely to be favorable.

The general Sessions will be held at the Music Hall, Bellevue Avenue, adjoining the Ocean House, and those of the Sections at the Newport Casino, also immediately contiguous, which for the first time in its history, and as an act of courtesy, is permitted by its Governors to be occupied for other than the purpose for which it was built.

The hotels are, in order of their nearness to the place of meeting, the Ocean House, the Clifton House, the Germania Hotel, Pinard's, Hartmann's, the Aquidneck, Brayton's, the Kay Street House, the Perry House, the Park House, the Sherman House, the Cliff Avenue Hotel, and Bateman's. It is as yet uncertain whether there will be, by the time of meeting, a new hotel at the Newport Beach.

The meeting of the Association occurs nearly synchronously with the two hundred and fiftieth anniversary of the settlement of Newport. The City authorities will probably fittingly recognize the presence of the National Medical Convention at such a moment, the more cordially since the virtual founder of the colony, certainly its principal leader, John Clark, was a physician. It will add to the interest of the occasion that the now Mayor of the City was one of the incorporators, in 1879, of the Newport Sanitary Protection Association, and is the parent of a rapidly rising physician, in New York.

The ancient name of Newport Island was "Aquidneck," or "The Isle of Peace." In view of this, it is to be hoped that the wisdom of the Association in turning away, the present year, from the mutual rivalries and the internal dissensions inseparable from the great centres of practice and of medical education, to what is virually neutral ground, may be made manifest, and that the coming Session may prove one of the largest, most harmonious, most scientific, and best contented meetings that has yet been held.

HORATIO R. STORER, M.D.
Chairman Committee of Arrangements.
Newport, R. I., Feb. 25, 1889.

SOCIETY PROCEEDINGS.

Gynæcological Society of Boston.

Regular Meeting, October 11, 1888.

THE PRESIDENT, HORACE C. WHITE, M.D., IN THE CHAIR.

Richard J. Thompson, M.D., of Fall River, Mass., was elected to active membership, and John B. Learned, M.D., of Florence, Mass., was elected to corresponding membership.

DR. HENRY O. MARCY read a paper on

THE PERINEUM; ITS ANATOMY AND PHYSIOLOGY, AND THE METHODS OF RESTORATION AFTER INJURY.

The importance of this subject, and the differ-

ences of opinion yet held by many of the leading authorities, both in Europe and America, seem sufficient to make the theme one of marked interest to the profession at the present time. All good surgery must be based upon a thorough knowlege of anatomy, and while this is essentially true in the consideration of every operative measure, it is especially to be emphasized where the avowed object of the operator is the restoration of the injured parts to their former normal condition. This is the problem confronting the obstetric or gynæcic surgeon when he undertakes to deal with lesions of the pelvic floor.

The description of the anatomical structure of the pelvic floor in most of the text-books appears to me faulty, and on this account much confusion occurs, not only in the use of names applied to certain parts, but especially in involving the whole subject in unnecessary complexity. The comparison between the component structures of the male and female pelvis shows a closer analogy than is at first apparent. The levator ani in the male is inseparably blended with the sphincter ani. The transversalis perinei in a central tendinous line joins with the levatores and sphincters in front of the anus, and anteriorily between this point and the accelerator urinæ and erector penis there exists an irregular space, floored by the deep perineal fasciæ, called the triangular ligament of the urethra. This corresponds to the vaginæ opening in the female. The erector penis and erector clitoridis are similar in position and function. The accelerator urinæ, or ejaculator muscle, separated in the median raphe, is not very unlike the sphincter vaginæ muscle. The transversi perinei are placed more obliquely in the male than in the female, and are often less well developed.

Reference was then made to the dissections of Dr. Henry Savage, of London. These studies, supplemented by the important teachings derived from frozen sections, greatly modify the previous views of the physiological relationship of the pelvic organs. The depth of the perineum is less than is usually described. The axis of the anus cuts that of the vaginæ at nearly right angles, and leaves in the external angle an irregular, flattened portion of tissue, rarely, when examined upon the living subject, more than ½ an inch in thickness. In the nulliparous woman this is clearly defined as a firm portion of the pelvic floor, and is composed of skin, fat, elastic and connective tissue, transverse muscles sustaining fascia, and the anterior portion of the sphincter ani. The vaginæ side is usually slightly concave, and the rectal side is convex, owing to the interblending of the sphincter ani. If the finger is carried up just within the perineum proper, and a little to either side, there can be felt the firm enclosing band of the levator attachments to each of the rami of the pubes above, and descending to join with the posterior fibres of the sphincter ani and coccygei. In the perineum posteriorly this is firmly interblended upon either side with the transverse perineal muscles. These are under the control of volition in a considerable degree, and acting conjointly serve to draw the vagina forward on to the pubes.

The sacral prominence throws a large proportion of the abdominal weight upon the symphysis pubis and the recti muscles, in the support of the body, and thus relieves the pelvic basin and takes off undue strain from the pelvic floor. The rectum is rarely entirely empty, is circular in shape, serves the digestive apparatus, in a measure, as a constantly receiving reservoir and, when not disturbed, may be felt from the vagina as a tube curving posteriorly. It is suspended and supported—slung, so to speak—by the levator ani muscles which hold the vagina in their encircling loop. On the contrary, the vagina, entirely unlike the earlier diagrams, is flattened antero-posteriorly upon itself and its walls are, when at rest, ever in close apposition. The vagina joins with the vulva at right angles to its lateral opening at the entrance of its passage through the pelvic floor. The vulvar organs are all intimately blended with and go to form a part of the perineum proper. On each side of the vaginal orifice are the erector clitoridis, the bulbo-cavernosus, and the transversus perinei muscles, and these, with the levator ani, make up in a large measure the pelvic floor. The bulbi-vaginæ and the Bartholini glands are covered by these muscles with their entire plexus of vessels, abundant distribution of lymphatics and nerves. The erector clitoridis, and bulbo-cavernosus muscles, with the transversus perinei, join each side to constitute the ovate muscular vaginal orifice, and in their conjoined action perform a very important physiological function in sexual congress, often underestimated or ignored.

The much discussed, so-called perineal body has, in my opinion, misled some of our prominent authors into false positions, and caused great confusion and misunderstanding among physicians.

I have been criticised, in emphasizing the muscular floor of the pelvis, that I underestimated the importance of the variously distributed connective tissue and fascia. This is not by any means my intention. The superficial perineal fascia, in its deep layer in the male, as well as in the female, covers and incloses the transversus perinei muscles, forming strong ligamentous transverse bands uniting in the perineum, designated by Savage as ischio-perineal ligaments.

The pubo-coccygei, acting in unison with the other muscles of the pelvic floor, draw forward, and thus aid not only in closing the rectum, but hold both it and the vagina in the anterior curve, so important to be retained for the preservation of normal function. A horizontal section, made

through the floor just above the sphincter vaginæ and posterior to the junction of the transversus perinei, shows the deeper fibres of the pubo-coccygeus, united in a loop behind the lower border of the rectum, holding it from the fixed point at the pubes, as in a sling. This loop is connected with the transversus perinei, bulbo-cavernosus, erector clitoridis, sphincter vaginæ, and sphincter ani muscles by strong layers of connective tissue, the importance of which, for union and support, cannot be readily overestimated.

We have already observed that the circular loop of muscular fibres of the bubo-coccygeus, posterior to the anus, carries the rectum forward on to the vagina and changes the vertical vulvar outlet into an antero-posterior closure of the vaginal canal, and this again is thrown into two lateral folds. The longitudinal muscular fibres external to the vaginal muscle, and which extend, both in front and behind the vagina, along the distal third, are the chief cause in producing this intrafolding, constituting in large part the so-called columnæ rugarum. The letter H shape, thus given to the vaginal column in section, is well known in the arts as the form adapted best for the resistance of vertical weight. This elastic column, retained in its shape and position by its vulvar and perineal support, in its upper border is blended with the cervical tissues. The union thus made with the uterus is at nearly right angles to the vagina, and serves to hold the lower segment of the uterus backward, retaining that organ, like a ship at anchor, swung on its lateral supports, with freedom of mobility at its moorings. This vaginal support to the uterus is so effective, in the normal condition, that the cervix uteri is rarely displaced without there first ensues a change in the vagina. In a sense, muscle and fascia are equally important, since the one fails in its function without the support of the other.

I have carefully reviewed our present knowledge of the anatomy and physiology of the pelvic floor, since all attempt at a restoration must, in large measure, depend upon our understanding what we mean to restore.

It should be taught as cardinal that the obstetrician has not completed his duty to his patient until he has carefully examined, in a good light, the vaginal outlet. There is still considerable difference of opinion if an attempt at immediate repair is advisable. This has been questioned, since the bruised and raggedly torn tissues seem unsuited for primary union, and the lochial discharges liable to infect the wound.

Antiseptic midwifery, however, has abundantly demonstrated the error of such conclusion. When the parts are maintained aseptic, the union rarely fails, and if by any reason this should not take place, the patient is rendered none the less fitted for subsequent operation. The torn tissues are very vascular, extraordinarily developed in preparation for the parturient act, and paralyzed, in a measure, by the extreme tension to which they have been subjected. All this favors a rapid plastic repair. There can be little doubt the time is not far distant when the patient will rightfully demand of the practitioner as rigid care in this respect as in any other part of her supervision.

The primary operation is comparatively simple and often will not require an anæsthetic. A solution of cocaine is frequently of service. Under irrigation with sublimate solution, the vaginal vault is temporarily lightly tamponed to retain the uterine flow, with one or two fingers in the rectum, unite the parts with a deep continuous buried suture of tendon. The torn muscles are not retracted and lie easily in apposition. The deep sutures are limited to the perineum, and should be so placed as to be covered by the superficial vaginal lines of union, and are four or five in number, taken with the double continuous stitch hereafter described. More recently I have modified the operation further by commencing at the upper angle of the wound, closing it by a tendon suture applied as a blind stitch. This is best effected by a straight Hagedorn needle, lightly but accurately piercing the connective tissue, beneath the mucous membrane, from side to side. The sewing is continuous in the same way over the fourchette posteriorly to the limit of the division of the skin. Thus the divided edges are brought evenly into apposition without the vestige of a stitch in sight. The parts, carefully dried, are dusted with iodoform and covered with iodoform collodion. The tampon is replaced by a light packing of iodoform wool, and, if the operation is done aseptically, the repair goes on as in a subcutaneous wound.

If the rupture extends into the rectum, the lower bowel having been well washed with sublimate, care being exercised not to allow retention, and tamponed with iodoform wool, the rectal mucous membrane is closed with great care, the stitches being continuously taken as above described. This is carried to the anal opening and the suture left uncut. When drawn sufficiently tense it becomes a buried suture, and the rectal mucous membrane lies in close apposition. The operation is then continued as in incomplete rupture, the double suture (the Marcy stitch) also carefully enclosing the divided sphincter. When the edges of the two anterior sides of the triangle have been coapted by the buried suture, the end is joined to the rectal suture in front of the anus. Although I have usually retained the united parts at rest without strain for some days, by means of a lateral support, as a sort of splint, with parallel pins applied in halves and joined like a safety-pin,[1] in a number of instances I have omitted this support and complete union followed without pain or even œdema of the parts.

The operation is to be commended for its sim-

[1] Vide THE JOURNAL, October 27, 1883.

plicity in application, the comfort of the patient, as well as assurance of result. A word of caution may be required that the tissues are not drawn too taut, since retention in easy apposition is to be sought, and constriction of tissue avoided, as, even in an aseptic wound, injury must otherwise result.

There is a large class of injuries to the pelvic floor, incident to child-birth, usually overlooked or underestimated, because the external orifice shows no material damage. These concealed injuries are due to a submucous tear of the transversi or a rending of the pubo-coccygeus from its posterior attachment. It is exceptional that the injury is symmetrical.

There is a series of severe injuries where the vagina shows no evidence of lesion, and a deep post-vaginal injury to the muscular groups can usually be demonstrated. The finger no longer feels the firm ridge of the transversi muscles closing the vulva posteriorly. The pubo-coccygeus is felt as a large, open loop, passing obliquely backward into the pelvis, changing in a marked degree the plane of the pelvic floor. A careful study of the differences between these and the normal conditions renders this injury readily recognizable.

Dr. Marcy than gave a very careful review of the literature of the whole subject of injury to the floor of the pelvis and the repair of these injuries. Continuing he said: In the earlier part of this paper, I endeavored to show the anatomical relation of the parts, when normal; the more exact conditions of the structures as usually found after injury, and their perverted physiological action, producing various degrees of suffering. It was demonstrated that the changes in the vaginal structures were not generally due to a primary injury of this muscle or its mucous covering, but to secondary forces brought to bear upon it, called into action by the modified relations of the muscles of the pelvic floor; the transversi perinei no longer supporting and holding in place the other groups, but on the contrary, retracting towards their origin and thus everting, the vulvar opening; the levators ani, not able to act as a suspensory band, pulling forward and closing the vaginal canal, but on the contrary, freed from their central moorings, drawing the anus upward and backward. These, of course, are accompanied by changes in vascularity and innervation, by weakening of the pelvic fascia, by absorption of the fat and elastic tissue, by defective action of the bulbo-cavernosus, erector clitoridis, and sphincter vaginæ muscles, by consequent imperfect circulation in the erectile tissues, and perverted gland secretion. The ultimate effects are a bladder weakened in support, a distorted rectum, a displaced uterus, each factor adding to the other, until the sum total of discomfort renders life often a grievous burden.

Dr. Marcy then referred, with quotations to his papers read before the American Medical Association in June, 1883, and the Eighth International Medical Congress in August, 1884, and other publications, and he showed conclusively that he was the first to use the buried animal suture in perineorrhaphy, which he had used for the radical cure of hernia in 1871.

In conclusion, Dr. Marcy described his operation as follows: In complete ruptures, with more or less prolapse, the transverses perinei muscle can no longer be felt as a band in front of the rectum, and the pubo-coccygeus has lost its tonicity. The restoration of these, with the various attachments of the sundered groups, is the object sought. The patient, etherized, is placed on a table, in a good light. The limbs are flexed, and both thighs are carried closely on to the abdominal wall. This position is retained by the aid of assistants or the Clovis crutch, which has been simplified by Dr. Kelly, of Philadelphia. Under the hips is placed a rubber inflated irrigating pan, with a large efferent tube, to conduct the fluids into a receptacle under the table. These inflated rubber receptacles are a great convenience, preventing all soiling of patient and surgeon, and were first made for me, nearly ten years ago, by the Davidson Rubber Co., of Boston. Somewhat recently, with a slight modification, they have been introduced to the profession as the "Kelly pad." The irrigation with a 1 to 2000 mercuric bichloride solution is under the charge of an assistant, and the entire operation is conducted with due antiseptic care. The sphincter having been stretched and the bowel thoroughly emptied, two fingers in the rectum, the posterior third of the vagina is separated with knife or scissors, from its vulvar attachments. The recto-vaginal space is easily found, without much loss of blood, and the dissection of the vagina from the rectum is carried into the lateral sulci as far as may be judged sufficient. The separated flap is lifted and held by an assistant; then I introduce a large curved needle, the eye near the point, armed with tendon, deeply from side to side; the opposite end is threaded, and the needle withdrawn, carrying the tendon with it. The suturing is continued in this way, until the required number of stitches are taken. This manner of applying the suture, called the shoemaker's stitch, quite unlike any other, I demonstrated at the International Congress in London, in 1881, and so far as I know, its originality has never been questioned.

In rectocele, with prolapse and large, deep sulci, the buried double stitch is taken on either side to join the separated fibres of the levator loop with the retracted transverse perineal muscles, and then are united laterally. Usually, four or five stitches are required to unite the posterior vaginal fascia, and then the separated ends of the

perineal muscles are included by deep sutures. Any needle and stitch may be used, but I prefer the one above mentioned.

In prolapse, where there is great redundancy of the posterior vaginal wall, a portion may be required to be removed, otherwise the edges of the inverted sides are united vertically. I use the buried suture, as described above, in recent cases, and seal with iodoform collodion.

In complete ruptures, after a careful refreshing of the sundered edges with a sharp knife, I split laterally, between the rectum and vagina, quite sufficiently to permit a free separation of the flaps. Over the sphincter, it is usually necessary to carry the dissection in a posterior direction, in order to reach the retracted ends of the sphincter muscle. The lateral dissection must also be sufficiently deep to reach the separated ends of the transversus perineal muscles. To effect this, the posterior third of the torn vagina is usually detached.

If the ends of the retracted perineal muscles seem tense when united, I use the lateral supports, applying one or two pins as heretofore described. These serve simply to retain at rest the coapted parts, and lie parallel to the anus outside the sutures. If the operation is aseptic, the after-treatment is simply rest in bed, and the cure is complete. The operation should be conducted with the strictest care, since it is difficult to operate upon this portion of the body without contamination of the parts involved. The sutures should be applied under irrigation, and the parts about the vulva covered with towels wet in a sublimate solution. Of all surgical procedures, few can be more dangerous than the deep implantation of infection carried by a septic buried suture.

My method differs from others in the following particulars:

1. The dissection of the posterior third of the vagina, not its mucous membrane, from its vulvar attachment, carried as deemed necessary into the recto-vaginal space, and the retention of this flap.

2. In rectocele with prolapse, the closure of the deep layers of post-vaginal fascia by a continuous buried animal suture, taken either single or double stitch.

3. In lifting forward the vagina from its vulvar attachments, the retracted transverse perineal muscles with their connections can be reached and closed also by a deep buried suture, making in this way a true restoration of the pelvic floor.

4. Coapting all superficial surfaces by a buried animal suture, applied in a blind, continuous stitch from side to side, covering the same when dry with iodoform collodion.

5. The application of lateral supports, pins, external to the sutures as a splint, to hold the parts in complete apposition without strain.

6. In complete ruptures, the lateral dissection, the joining of the rectal and vaginal edges with buried sutures, and then finishing the operation as in complete ruptures.

Philadelphia County Medical Society.

Stated Meeting, January 23, 1889.

THE PRESIDENT, W. W. KEEN, M.D., IN THE CHAIR.

DR. MORDECAI PRICE read a paper on

AMPUTATIONS OF THIGH AND LEG.

(*Continued from page 321.*)

DR. H. R. WHARTON: I agree very thoroughly with Dr. Price as to the necessity of securing a good stump, and as to the point of election in amputations through the leg. I have for some time made it a rule not to make any amputation near the ankle-joint, prefering to go some distance above, if I have to go above the ankle.

I, however, disagree with him in regard to the discomfort which a patient suffers with a Syme or a Pirogoff amputation. I have seen such cases get along very well, and walk with comfort. I also disagree with Dr. Price in regard to knee-joint amputations. I, of course, refer to amputation through the joint, the condyles being saved and the patella being left. I have seen these patients apparently walk with comfort, and have a good stump. Where the amputation is one at the knee-joint, a portion of the condyles being sawed off and the patella removed, a square stump is secured which can be well covered. I have seen a number of cases of this operation, and in these the patients had good stumps.

I think that the main element of a good stump is a movable covering, the skin being perfectly movable over the bone. If the skin is bound down and is subjected to pressure, the patient will suffer from constant irritation, and will be apt to exhibit some of the forms of mechanical ulceration seen in stumps.

I agree in regard to the uselessness of trying to save too much time in amputations.

DR. JOHN B. DEAVER: In the large number of amputations I do in the hospitals of Philadelphia, I never do a Syme, but I do a Pirogoff and a Chopart. We often have to be governed by the wishes of the patient. I have had cases where I advised an amputation of the leg in order to render the use of an artificial limb easier, but where the patient has insisted that as much as possible of the limb should be saved. A Pirogoff does well. It answers better for a working man than for one under better circumstances. Osteoplastic resection of the foot gives the patient an almost useless limb. Yet it is a very nice and a very difficult operation. It has been performed only twice in this city, once by Dr. Hopkins, and once by Dr. F. H. Gross, at the German Hospital. The patient of Dr. Gross is still in the hospital. He is able to get around, but I do not think that he will be able to do hard work.

In amputations through the knee-joint I think

that it is important to leave the patella, which serves partly to carry out the theory of Dr. Price of leaving a plane surface. When the patella is removed there are left two irregularities caused by the condyles. We must here be careful not to divide the ligamentum mucosa. If that is divided the action of the quadriceps causes retraction of the patella. I have, however, seen retraction in cases where attention was paid to this point. In such cases it would be better to do the amputation at the knee. This, of course, opens up the medulla, and exposes the patient to the dangers of septicæmia, but with antiseptic surgery I think that the risk would not be increased.

DR. J. PRICE: Attention has been called to the locomotion of persons wearing artificial limbs. Dr. Price has not said very much about his own locomotion. He is very fond of using the gun, and I have often hunted with him from morning until evening, and can speak of the tolerance of a good stump and a good artificial limb. In his own case he has wonderful tolerance for prolonged walking and climbing.

I have watched many cases of amputation where the operation was performed years ago. One case, operated on by Dr. John Mitchell, I see sometimes with one crutch and sometimes with a crutch and a cane. In none of these cases is the locomotion good. The amputations were made at the points criticised this evening.

DR. A. HEWSON, JR.: The only point I have to offer is in regard to Pirogoff amputations. It has been suggested that no artificial appliance could be employed in these cases that would look well. In several of these operations, done by my father, I have seen a shoe so well applied to the stump that it was almost impossible to tell that the man had an artificial foot. The difficulty was overcome by a large spring being put in the place occupied by the ball of the foot, *i. e.*, extending from the heel toward the toe, so that when the heel was put to the ground there was not that sagging in of the shoe as occurs when simply a filled shoe is worn.

DR. O. H. ALLIS: My own feeling is that where amputation is very low down near the ankle-joint, the limb is used almost as a crutch; whereas if the amputation is a little below the knee, the instrument maker can make so good an ankle-joint that the wearer can walk on any declivity almost as well as with the natural limb. When you try to piece out an ankle, the part cannot be used as a foot, but is more like a crutch.

DR. FRANK WOODBURY: I should like to say a word in regard to a class of cases to which reference has not yet been made, that is, to amputation for disease, and particularly tuberculous disease of the joints. I would refer to a series of observations made by Ogille, in which it is stated that the prognosis of tuberculosis of the lungs is improved by an amputation, and that the larger the portion of the body removed, the better chance there is for the entire recovery of the patient. It seems that in certain cases of phthisis the nutritive powers are not sufficient to maintain the nutrition of the entire body, so if we can remove say one-eighth, or a larger portion of the body, the digestive function and the blood-making function are more than sufficient for the remainder of the body, and the nutrition is therefore improved.

This is directly to the point of operating in cases of joint tuberculosis, and also in the direction of the paper that we should not endeavor to save all the tissue that is available.

DR. M. PRICE: I agree with the statement of Dr. Allis that such appliances are just like crutches. A man with a well-made foot can readily go up stairs giving a little spring with the sound foot. I was able to play base-ball, foot-ball, and the like, and was at school for a long time before it was known that I had an artificial limb by any one with the exception of my room-mate.

In regard to Dr. Collins' statement as to the teaching when I was a student, Dr. Smith, who was at that time professor of surgery, was one of the most conservative of men. His statement was that we have to consider what we are doing in amputating, and consider the influence upon the man himself. As many of these patients are led into bad habits of dissipation by being invited to drink by every one they meet, it might, in these cases, be better to amputate around the throat. I am not surprised that Dr. Collins has called attention to the fact that Dr. Smith amputated three fingers' breadth below the tubercle of the tibia. Dr. Smith had been in the war, and had seen much to show him the usefulness of a proper length stump.

If I were going to amputate near the knee, I would operate below the joint, giving the patient a knee-bearing leg, with the patella and all its attachments in place. As soon as you amputate the leg, retraction takes place. It is one of the secrets of treating a man with amputation to keep the stump straight. If the limb is left lying loosely on a pillow, there will be retraction of the muscles. Now and then I have to wear a peg, and it is then two or three days before I can straighten the leg. I would not suggest an amputation that opens the knee-joint. Where the operation suggested cannot be done, I would operate at the junction of the lower and middle third of the thigh, and thus the knee-joint could be brought in the proper position.

In the case of workingmen who have passed that period in life when there is no chance of advancement, I have no objection to a Chopart, or any other amputation that will give the man a limb that he can walk upon. I am speaking of amputations that will give the man the same ap-

pearance that he originally had. I think we err in discussing the question of what ought or ought not to be done with the patient. We are there as his adviser, and it is our business to do the best for the patient. I say to him such and such should be done. If he says that he will not have it, I decline to treat him.

STATE MEDICINE.

Proposed Medical Legislation.

AN ACT ENTITLED, AN ACT TO REGULATE MEDICAL EDUCATION AND THE PRACTICE OF MEDICINE AND SURGERY, AND TO PUNISH PERSONS VIOLATING THE PROVISIONS THEREOF.

Be it enacted by the Legislature of the State of . . . . . .

SEC. 1.—A Board to be known as "The State Board of Medical Examiners," shall be appointed by the Governor, subject to the approval of the Senate, consisting of nine members, whose duty shall be to examine all applicants for registration as students of medicine, and to examine fully all persons applying for license to practice medicine and surgery in this State. The appointees must be members of the medical profession of recognized ability and honor, and residents of the State not less than five years; but no member of any college or university having a medical department shall be appointed to serve as a member of said Board. The term of office of the members of said Board shall be three years, and until their successors are appointed; provided, however, that the first appointees shall be divided into three classes of three members in each class, the term of service of the first class shall expire in one year, that of the second in two years, and that of the third in three years from the date of their appointment.

SEC. 2.—Said Board of Medical Examiners shall elect a President, a Secretary, and a Treasurer. It shall have a common seal, and the President and Secretary shall be empowered to administer oaths in taking testimony upon any matter pertaining to the duties of said Board. Said Board shall hold meetings for examinations at the Capitol building of this State the first Tuesdays of January, April, July and October of each year, and at such other times and places as the Board shall deem expedient. Said Board shall keep an official record of all its meetings; also an official register of all applicants for examinations for a certificate as a medical student, or a license to practice medicine and surgery in this State. Said register for certificate or license shall show the name, age, and time he or she may have spent both in preparatory and in medical study, together with the name and locations of all colleges which have granted degrees or certificates of attendance upon lectures in medicine. Said register shall also show whether such applicant was rejected or licensed under this act. Said register shall be *prima faciæ* evidence of all matters therein contained.

SEC. 3.—All persons hereafter intending to commence the study of medicine in this State shall apply to the State Board of Medical Examiners for an examination and certificate of registration as students of medicine and surgery. It shall be the duty of said Board to personally examine all such applicants in the following branches of general education, viz.: English grammar, composition, geography, civil history, arithmetic and algebra, physics and all the natural sciences, and at least one of the following languages, Latin, French, or German, and shall give certificates only to those whose examinations are satisfactory to the Board. And no person shall be credited for any part of the legal period of his medical studies prior to the date of his certificate of preliminary examination. All persons hereafter commencing the practice of medicine or surgery in any of its branches in this State shall apply to said Board for license so to do. Applicants for examination shall be divided into three classes, to-wit: Persons graduated from legally chartered medical schools not less than five years before the date of application for a license; *Second*, all other persons graduated from a legally chartered medical school; and, *Third*, medical students taking a regular course of medical instruction. Applicants of the first class shall submit to examination upon the following named branches, to-wit: materia medica and therapeutics, obstetrics and gynecology, practice of medicine, surgery and surgical anatomy. Those of the second and third classes shall submit to examinations upon anatomy, physiology, chemistry, materia medica and therapeutics, histology, pathology, hygiene, practice of medicine, surgery, obstetrics, gynecology, diseases of the eye and ear, medical jurisprudence, and such other branches as the Board may deem advisable. The questions for examination of applicants of the first and and second classes shall be the same in branches common to both. Said Board shall not license graduates of a later date than January 1, 1890, until satisfactory proof is furnished that the applicant has studied medicine and surgery at least three years after registration as a medical student before graduation; attended at least three annual courses of medical lectures of not less than six months' duration each, including attendance on hospital clinical instruction during the second and third courses; is of good moral character, and not less than 21 years of age. Applicants of the third class upon completion of two full courses of lectures, of not less than six months' duration each, can be examined upon the follow-

ing named branches, to-wit: anatomy, physiology, chemistry, histology, pathology, materia medica, and therapeutics. If said examination is satisfactory it may issue a certificate that the applicant has passed a final examination in these branches. All examinations shall be both scientific and practical, but of sufficient severity to test the candidate's fitness to practice medicine and surgery.

SEC. 4.—All examinations shall be in writing, unless otherwise requested by the applicant. In oral examinations the questions and answers must be of a fundamental character, and such as can be answered in common by all students of medicine. When desired, said examination may be conducted in the presence of the Dean of any medical college, or the President of any State Medical Society in this State. If said examination is satisfactory the Board shall issue a license entitling the applicant to practice medicine in this State. The votes of all the examiners shall be by yes or no, and written, with their signatures, upon the backs of the examination papers of each candidate for the respective branches. A license shall not issue unless the applicant passed a satisfactory examination on at least three-fourths of the branches required by this Act. Said examination papers shall be kept on file by the Secretary of said Board, and shall be *prima facie* evidence of all matters therein contained. All licenses shall be signed by the President and Secretary of said Board, and attested by the seal thereof. The fee for examination shall be fifteen dollars for each applicant of the first and second classes, and twenty dollars for each applicant of the third class, and a fee of five dollars may be charged for each examination in preliminary education. It shall be paid to the Treasurer of the Board, and applied towards defraying the expenses thereof.

SEC. 5.—The Board may, by a unanimous vote refuse to grant or may revoke a license, for the following named causes to-wit: Chronic and persistent inebriety; the practice of criminal abortion, or for publicly advertising special ability to cure diseases, that in the opinion of said Board, it is impossible to cure. In complaints for violating the provisions of this Section, the accused person shall be furnished with a copy of the complaint and given a hearing before said Board, in person or by attorney, and can finally appeal from the decision of said Board, to the appointing power thereof.

SEC. 6.—The person so receiving said license, shall file the same, or a certified copy thereof, with the Clerk of the District Court in, and for the county in which he or she resides, and said Clerk of the Court shall file said certificate or copy thereof, and enter a memorandum thereof, giving the date of said license, and the name of the person to whom the same is issued, and the date of said filing, in a book to be provided and kept for that purpose; and said Clerk of the Court shall each year, furnish to the Secretary of said Board, a list of all certificates on file in his office, and upon notice to him of the change of location or death of a person so licensed, or of the revocation of the license granted to such person, said Clerk shall enter at the appropriate place in the record so kept by him, a memorandum of said fact; so that the records so kept by said Clerk of the Court shall correspond with the records of said Board as kept by the Secretary thereof. In case a person so licensed shall move into another county of this State, he or she shall procure from the Clerk of the Court a certified copy of said license for which no charge shall be made, and shall file the same with the Clerk of the District Court in the county to which he or she shall so remove. Said clerk shall file and enter the same with like effect as if the same was the original license.

SEC. 7.—This Act shall not apply to commissioned surgeons of the United States Army or Navy, to physicians or surgeons in actual consultation from other States or Territories, or to actual medical students practicing under the direct supervision of a Preceptor.

SEC. 8.—Any person shall be regarded as practicing medicine or surgery within the meaning of this Act, who shall append the letters M.D. or M.B., to his or her name, or repeatedly prescribe or direct for the use of any person or persons any drug or medicine, or other agency, for the treatment, cure, or relief, of any bodily injury, infirmity or disease.

SEC. 9.—Any person practicing medicine or surgery, in this State, without first having obtained the license herein provided for, or contrary to the provisions of this Act, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by a fine not less than $50 or more than $100 dollars, or by imprisonment in the county jail for a period not less than ten or more than ninety days; or both fine and imprisonment. Justices of the Peace, and the respective Municipal Judges, shall have jurisdiction of violations of the provisions of this Act. It shall be the duty of the respective county attorneys to prosecute violations of the provisions of this Act.

SEC. 10.—All Acts or parts of Acts now existing not in accordance with the provision of this Act are hereby repealed.

SEC. 11.—This Act shall take effect and be in force from and after its passage.

THE Ohio Senate has passed a bill prohibiting physicians from advertising, and fixing a license fee of $100 a month for all non-resident practitioners practicing in the State.

NEW INSTRUMENTS.

NASAL SPECULUMS.

BY CARL H. VON KLEIN, A.M., M.D.,
OF DAYTON, OHIO.

The experience of physicians in examining the anterior parts of the nasal cavities has been of an unsatisfactory character, from the fact that the numerous nasal speculums now in the hands of the physicians are, in my humble judgment, torturing apparatuses.

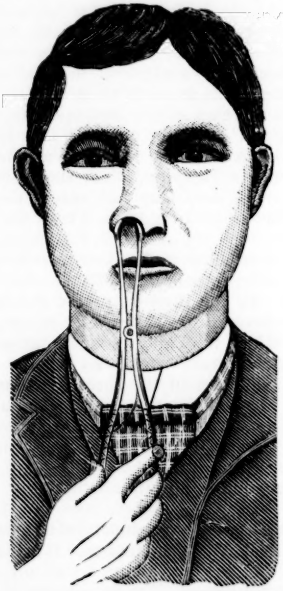

Fig. 1.

They are all made, in one way or another, with two or more prongs or blades, which are introduced into the nostril and dilated, either with a thumb-screw or spring, until the instrument is self-retaining. A diseased lining of the nose cannot stand much dilatation without severe pain, in many cases the pain is so intense that the patient grasps the operator by the hands and begs not to be hurt.

Nervous patients become anxious to get through with their examination. In nine cases out of ten the blades or prongs slip out, and the physician prays for a renewal, but many patients will not allow a re-examination. A careless operator will probably not renew the operation, to the satisfaction of his patient.

I have, therefore, sometime back, devised and published a description of my long-handled speculum, as shown in Fig. 2, by which the patient can dilate his own nostrils to his own satisfaction, as shown in Fig. 1.

The patient can make a dilatation with great ease and without the slightest inconvenience to himself or annoyance to the operator. The patient introduces it with the right hand in the right nostril, and with the left hand in the left nostril, the more he closes his hand or presses the handles together the more he dilates the nares.

The ends of the blades are either straight or slightly curved on each outer side, to prevent it from slipping out. However, there are many nasal cavities that the slightest curve on the blade pressing against the membrane, no matter how smooth the edges may be, can hardly bear the slightest dilatation.

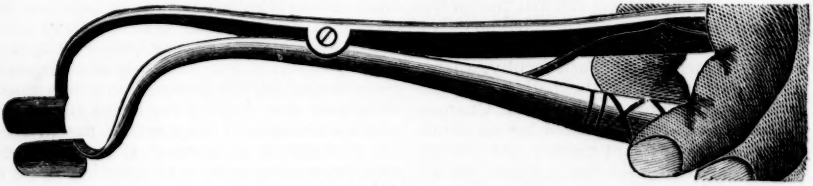

Fig. 2. Full size, 9 inches long.

Fig. 3. Full size, 10 inches long.

In such cases the straight blade speculum must be used. I have, since my last description in the *Medical Register*, devised another nasal speculum or nasal dilator, with which the nasal cavity can be dilated without covering any part of the walls of the inner cavities.

The blades, as shown in Fig. 3, are turned upwards parallel with the handles, thus to enter the extended part of the nose in a vertical position parallel with the face, making no obstruction to the parts where an examination may be necessary.

The operation is so easy and so comfortable that children under 3 years of age undergo examination of the nares without the slightest complaint. The handles of the instrument are all 9 inches in length, while the blades vary in size, as a rule they should go 5 in a set, 3 various sizes where the blades are at an angle, and 2 sizes where the blades are upwards. However, one of each of the middle sizes would be sufficient to the average practitioner.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

An English Lady Defends her Thesis before the Paris Faculty—The British Army Medical Department—The Metropolitan Hospital Sunday Fund—Bee-stings in Rheumatism—The Action of Hydrobromate of Ulexine—The British Dental Association—The Children's Fête—Saccharin—The Pasteur Institute.

Miss Blanche Edwards, daughter of a deceased English doctor settled in Paris, publicly defended her thesis for the degree of Doctor of Medicine a short time ago. The subject she had chosen was "Hemiplegia in Diseases of the Nervous System." As the degree has not been frequently conferred on women by the Paris faculty, a large number of spectators filled the hall. Miss Edwards was congratulated by Professor Charcot, who admitted that she had passed her examinations in a specially brilliant manner, but did not clearly see what return she could expect for her conscientious labors. He asked her what she proposed to do? Her reply was, "I mean to attend all sick persons, but to devote myself specially to women and children." A number of students who occupied the body of the hall expressed their disapproval of the proceedings, but not very noisily.

It is rumored that Sir Thomas Crawford, K.C.B., will be the last chief of the Army Medical Department. This latter will be placed under a Board consisting of two non-medical officers and one medical ditto. It is also stated that some concession will be made to the Army Medical Department in reference to their grievance that they have been lately deprived of relative rank. The majority of the medical officers of the Army are in favor of having military titles, as is the case with the armies of Russia, the United States, etc. So far as personal danger is concerned the Army medical men have of late suffered more than any other branch of the service. It is thought that there is no good reason why a medical officer who is obliged to be in front of the battle and compelled to fight also, should not be called by a purely military title. In the olden days of the British Army it was usual for medical officers to hold commissions as combatants also.

"Sixteen Years of the Metropolitan Hospital Sunday Fund" was the part title of a lecture recently delivered by Sir Sidney Waterlow at St. Bartholomew's Hospital, when the Lord Mayor presided. He said that last year £40,379 had been collected, making a grand total for the sixteen years of £513,962, including legacies. Of this less than tenpence in the pound had been spent in salaries, collecting, distributing and advertising. In the division of the money, 4 per cent. was devoted to the purchase of surgical appliances, which were given away to the poor, then awards to hospitals were based on the average total expenditures of the three previous years, and each hospital was required to send a balance sheet and report for three years, with other details verifying receipts and expenditures. Sir Sidney said there were at present 2,031 beds in seventy-one metropolitan hospitals empty for lack of funds.

Bee-stings are now recommended as a somewhat heroic treatment for rheumatism. It is stated that an average of just 225.4 stings suffice to effect a cure in any one case. The introducer of the bee-sting treatment is evidently almost as ardent an entomological enthusiast as Sir John Lubbock, for he takes great pains to state that bee-stings are not nearly so dangerous as most people imagine, for he has, by way of demonstrating this proposition, given several healthy persons 150 stings apiece in the course of a single day without any ill consequences whatever. Acupuncture has in its day had its supporters, but what, if any, may be the advantages of apiopuncture must be left for time and experience to determine. Whether, however, there are any healthy persons in this country willing to receive in the cause of science some 150 stings *per diem*, or even any rheumatic patients who would like to be cured by 225½ stings, must be left for Dr. F. Tere, the introducer of the new remedy, to find out.

The active principle of gorse (Ulex Europœa) has been made the subject of special experiments, the alkaloid used being in the form of hydrobromate of ulexine. When it was applied to frogs this drug, at a certain dose, arrests all voluntary movements and reflexes, due to palsy of the motor

tract of the spinal cord and the motor nerve trunks. The muscles themselves gradually fail but, unless the dose has been very high, are not paralyzed. Respiration is affected and arrested by doses which are not large enough to produce much effect upon the voluntary muscles. The symptoms of this respiratory action come on with irregular breathing, which finally becomes more shallow until death ensues. When the hydrobromate of ulexine is given to one of the higher animals, it produces a rise of arterial pressure which lasts only for a short time, being followed by a fall. It is shown that the depressant action of the drug is its most important feature, for if large doses are used no primary rise, but a steady fall occurs. This fall is evidently due largely to a laming of the heart muscle by the direct action of the drug. The diuretic action of ulexine is very marked, being quite as great as that of caffeine. The opinion entertained is that the action of ulexine and its compounds upon the respiration is of so violent a character that it will be difficult, if not impossible, to make use of this agent in medicine. At any rate, it appears to be one of the most powerful alkaloids ever discovered, and requires the greatest care in manipulating it. Further experiments are now being carried out with the drug by experimenters who think it will eventually take its place as a very useful addition to the pharmacopœia of the future.

The British Dental Association will hold its annual meeting in Brighton on August 22, 23 and 24. The Association is doing much to educate the public on dental questions, and is uniting and consolidating the members of the dental profession. The meeting promises in every way to be a success.

The annual children's fête has recently been held at the Evelina Hospital for sick children. Through the generosity of various friends four large Christmas trees were provided. It may be mentioned that the hospital, of which Baron F. de Rothschild is President, has sixty cots permanently in use, and that in the course of a twelvemonth some 500 children pass through the wards. Since the last Christmas fête the floors of all the wards have been relaid with teak according to the practice adopted in the principal general hospitals, and though the nurses past and present have borne the expense so far as one ward is concerned, an additional burden has been cast upon the institution.

The report having gained general currency that the use of saccharin is injurious, the following report has been published by Dr. Thomas Stevenson, official analyst of the Home Office: 1. Saccharin is quite innocuous when taken in quantities largely exceeding what would be taken in any ordinary dietary. 2. Saccharin does not interfere with or impede the digestive processes when taken in any practicable quantity. 3. His personal experience is that saccharin may be taken for an extended period without interfering with the digestive and other bodily functions, hence there is no reason to think that its continued use is in any way harmful.

It is reported from Paris that the Pasteur Institute is now complete, and the laboratory appliances of the great bacteriologist are now being transferred to the new and magnificently appointed building. G. O. M.

MISCELLANY.

DR. WM. G. AUSTIN has been recently appointed resident quarantine physician at Mississippi Station.

DR. HORACE STEVENS, of Cambridge, Mass., died on February 24. He was graduated from the Medical Department of the University of Vermont. He was born in New Hampshire in 1816.

DR. EMANUEL BRAILLER, a prominent physician of Chambersburg, Pa., died on February 6, aged 48 years. He was a member of the American Medical Association, and of the Pennsylvania State Medical Society.

INFECTIOUS DISEASES.—Scarlet fever has been prevailing in Bismarck, Dak., for some time, and all churches, schools, and places of amusement have been closed. Diphtheria has been prevalent in Mechanicsville, Iowa. An outbreak of smallpox has occurred at Carson, Neb. At Belvidere, Ill., the schools have been closed in consequence of the prevalence of measles, varicella, and scarlet fever.

THE AMERICAN ASSOCIATION FOR THE STUDY AND CURE OF INEBRIETY has appointed a committee on "Nostrums, Proprietary Medicines, and New Remedies." Dr. N. Roe Bradner, 514 So. Third St., Philadelphia, Pa., is chairman of the committee, and will be glad to hear from any one who has knowledge of nostrums containing opium, alcohol or other poison, or of the evil resulting from their sale. This Association, of which Dr. Joseph Parrish, of Burlington, N. J., is now President, was organized November 30, 1870, the late Williard Parker being the first President, and the first paper, on the "Pathological Influence of Alcohol," was contributed by N. S. Davis, M.D., of Chicago.

A SIMPLE TEST FOR BLOOD, and easy of application, is made by the addition of tincture of guaiac and ozonized ether to a weak solution of blood, when a bright blue color is produced. If a drop of blood be mixed with one-half ounce of distilled water, upon the addition of one or two drops of tincture of guaiac a cloudy precipitate of the resin appears, and the solution has a faint tint. If to this solution one drop of an ethereal solution of hydrogen peroxide is added, a blue tint appears, which, upon a few minutes' exposure, gradually deepens. This test is very valuable for minute quantities of blood, and Dr. Day, of Geelong, succeeded in obtaining sixty impressions from a stain upon cloth where the microscope failed to show any blood.—*Coll. and Clinical Record.*

AT THE COMMENCEMENT EXERCISES of the Meharry Medical Department and the Dental Department of Central Tennessee College, held on February 21, the degree of M.D. was conferred upon 14, and the degree of D.D.S. upon 6 candidates. The Dental Department of this College is the only dental school for Negroes in this country, and the Meharry school is one of the two medical schools for Negroes.

DR. HENRY H. LANGWORTHY, of Rochester, N. Y., died at his residence in that city on February 5 He was graduated from the Geneva Medical College in 1848. He was a prominent member of the New York State Medical Society.

MEDICAL GRADUATES.—At the annual Commencement of Rush Medical College, Chicago, held on February 19, 127 candidates were graduated. At the Commencement of the College of Physicians and Surgeons, of Chicago, held on February 26, 48 candidates were graduated.

J. H. PURDY, M.D., formerly of Seneca Falls, N. Y., died recently, of yellow fever, at Panama, where he had gone to practice his profession. He was a graduate of Bellevue Hospital Medical College, in 1869.

THE FIFTH ANNUAL MEETING of the Fifth District Branch of the New York State Medical Association will be held in Brooklyn, on Tuesday, May 28, 1889. All Fellows are invited to present papers, communications, relation of cases and specimens at the meeting. All *written* communications presented will be published under the direction of the Executive Committee.

WM. T. LUSK, M.D., President.
E. H. SQUIBB, M.D., Sec'y, P. O. Box 94, Brooklyn.

INGLUVIN IN THE VOMITING OF PREGNANCY.—Dr. Popp reports considerable success with ingluvin in the vomiting of pregnancy. Having a very obstinate case, upon which he had exhausted all other resources, he administered three times daily, one-half hour before mealtime, 8 grains of ingluvin, and immediately afterward 2 tablespoonfuls of 1 per cent. hydrochloric acid solution. An improvement was observed after a few doses had been taken, and cure was effected after the treatment had been continued for three weeks.—*Deutche med. Wochenschrift*, January 17, 1889.

LETTERS RECEIVED.

A. Kingston, Philadelphia, Pa.; Dr. W. O. Anderson, Eureka, Cal.; Dr. Wm. Boys, Waverley, Ia.; Dr. R. Harvey Reed, Mansfield, O.; Geo. Purviance, Surgeon U. S. M. H., Baltimore, Md.; Dr. J. W. Park, Williamstown, Pa.; W. P. Cleary, New York; Dr. J. M. Bell, Murphy, N. C.; Dr. J. B. Hamilton, Washington, D. C.; Chas. W. Greene, Chicago; Dr. G. H. Randall, Seattle, W. T.; Dr. H. R. Storer, Newport, R. I.; J. H. Bates, New York; Dr. W. H. Forbes, Richmond Hill, N. Y.; J. B. Lippincott Co., Philadelphia; Joseph Bisohoff, Elgin, Ill.; Drs. Kent and Morrell, Putnam, Conn.; Jas. S. Kirk & Co., Chicago; Dr. John Phillips, Stevens Point, Wis.; W. H. Schieffelin & Co., New York; Dr. A. L. Hummel, Philadelphia; John A. Barrett Battery Co., Baltimore, Md.; Pantagraph Stationery Co., Bloomington, Ill.; Dr. St. v. Martinitz, Cedar Rapids, Ia.; Dr. J. G. Perry, New York; Dr. W. H. Schuyler, Boise Barracks, Idaho; N. W. Ayer & Sons, Philadelphia; Dr. J. W. Leadenham, Franklin, Pa.; National Architects' Union, Philadelphia, Pa.; Price Baking Powder Co., Chicago; Wm. S. Merrell Chemical Co., Cincinnati, O.; Dr. R. J. Dunglison, Philadelphia; Woman's Medical College, New York; Dr. Joseph Spiegelhalter, St. Louis, Mo.; Dr. D. T. Brown, Michigan City, Ind.; Philadelphia Polyclinic; Dr. H. T. Bahnson, Salem, N. C.; James F. Starr, Marshall, Tex.; Dr. Chas. N. Hewitt, Red Wing, Minn.; Miss Eliza K. Miles, Thomasville, Pa.; H. W. Young, Independence, Kan.; Dr. C. H. A. Kleinschmidt, Washington, D. C.; Dr. A. W. Strickler, Scottdale, Pa.; Caxton Agency, Cincinnati, O.; Thos. F. Goode, Buffalo Lithia Springs, Va.; Clark Bell, New York; Dr. J. S. Riggs, Redlands, Cal.; Dr. Wm. R. Finley, Altoona, Pa.; G. G. Burdick, Chicago; I. Haldenstein, New York; Dr. A. B. Storch, Ann Arbor, Mich.; Dr. Wm. A. Campbell, Ann Arbor, Mich.; Dr. J. A. Larrabee, Louisville, Ky.; Dr. C. N. Fowler, Youngstown, O.; Joseph Cummings, D.D., Northwestern University; Wells & Richardson Co., Burlington, Vt.; Dr. E. W. Bartlett, Milwaukee, Wis.; Dr. S. Solis-Cohen, Philadelphia, Pa.; Dr. Henry O. Marcy, Boston; Dr. S. B. Rowe, Rolla, Mo.

PAMPHLETS RECEIVED.

Dudley, E. C., M.D., Chicago, Ill. *Pressure Forceps versus the Ligature and the Suture in Vaginal Hysterectomy.* Reprint from Gynecological Transactions.

Jarvis, William Chapman, M.D., New York, N. Y. *Notes on a Case of Nasal Caries Complicated with Meningitis, Successfully Treated by means of the Surgical Drill.* Reprint from the Medical Register.

Mason, Lewis D., M.D., Fort Hamilton, L. I. *Pathological Changes in Chronic Alcoholism.* Reprint from the Brooklyn Medical Journal.

McClellan, Ely, M.D., Chicago, Ill. *Note on Rumbold's Method of Treatment of Catarrhal Inflammation of the Upper Air Passages.* Reprint from the Journal of the American Medical Association.

Weston, Edward B., A.M., M.D., Chicago, Ill. *A New Procedure in Cases of Anticipated Complete Rupture of the Perineum.*

Weston, Edward B., A.M., M.D., Chicago, Ill. *Cases of Synovitis of the Knee-joint.*

Weston, Edward B., A.M., M.D., Chicago, Ill. *A Plea for the Use of Anæsthetics in Obstetric Practice.*

Wimmer, Sebastian Jr., M.A., M.D., St. Mary's, Pa. *Terebene: Its Medicinal Uses and Value.* Reprint from the New York Medical Journal.

Wyman, Hal C., M.S., M.D., Detroit, Mich. *The Training of Nurses.* Reprint from the Medical Register.

Eccles, R. G., M.D., Brooklyn, N. Y. *Descent and Disease.* Reprint from the Brooklyn Medical Journal.

Nelson, Wolford, C. M., M.D., New York, N. Y. *Yellow Fever, Absolute Protection Secured by Scientific Quarantine.*

Parrish, Joseph, M.D., Burlington, N. J. *Climate and Malaria.* Reprint from the Official Transactions of the Ninth International Medical Congress.

Van Bibber, W. C., A.M., M.D., Baltimore, Md. *Prevention of Yellow Fever in Florida and the South.*

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 23, 1889, to March 1, 1889.

Lieut.-Col. James C. McKee, Surgeon U. S. Army, is granted leave of absence for two months, by direction of the Secretary of War. Par. 13, S. O. 44, A. G. O., Washington, February 24, 1889.

Major Charles R. Greenleaf, Surgeon, will proceed from this city as early as practicable to Newport Bks., Ky., to examine and report upon a proposed change in the location of the post hospital at the new barracks now in process of construction near that post; thence to Columbus Bks., O., to examine and report upon the necessity for an addition to the hospital at that post. Par. 16, S. O. 43, A. G. O., Washington, February 20, 1889.

Capt. Charles B. Byrne, Asst. Surgeon, granted leave of absence for twenty-one days. S. O. 44, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, February 21, 1889.

By direction of the Secretary of War, Capt. William O. Owen, Jr., Asst. Surgeon, is relieved from duty at Ft. Leavenworth, Kan., and will report in person to the commanding officer, Ft. Gibson, Indian Ter., for duty at that post, relieving Capt. C. N. B. Macauley, Asst. Surgeon, who, on being so relieved, will report in person to the commanding officer Ft. Leavenworth, Kan., for duty at that post. Par. 3, S. O. 48, A. G. O., February 21, 1889.